PLACEWORKS

SEPTEMBER 2020

FINAL EIR

NEW COMPREHENSIVE DUBLIN HIGH SCHOOL PROJECT EIR

for the Dublin Unified School District

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1. Introduction

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This Response to Comment document, which has been prepared in compliance with the California Environmental Quality Act (CEQA)[1] and the CEQA Guidelines,[2] provides responses to comments received on the Draft Environmental Impact Report (Draft EIR) for New Comprehensive Dublin High School Project, referred herein to as "proposed project." The Draft EIR identifies significant effects on the environment (impacts) associated with the proposed project, identifies alternatives to the proposed project and identifies mitigation measures to avoid or reduce potential environmental impacts. This document also contains text revisions to the Draft EIR. This document together with the Draft EIR constitute the Final EIR for the proposed project.

1.2 ENVIRONMENTAL REVIEW PROCESS

According to CEQA, lead agencies are required to consult with public agencies having jurisdiction over a proposed project, and to provide the general public with an opportunity to comment on the Draft EIR. This Response to Comments document has been prepared to respond to comments received on the Draft EIR. A Notice of Preparation of an EIR was issued by the District on October 1, 2019 for a 30-day-review period. A Notice of Availability of the Draft EIR was issued on June 19, 2020, and the Draft EIR was made available for public review for a 45-day public review period through August 3, 2020. Written and/or verbal comments on the Draft EIR were also collected during the public comment period at a public hearing held virtually at the District Board of Trustees ("Trustees") meeting on July 21, 2020, at 5:30 p.m. The Draft EIR was distributed to local, regional, and State agencies, and the general public was advised of the availability of the Draft EIR. Copies of the Draft EIR were made available for review at the District's website (www.dublinusd.org) and at the District's Office located at 7471 Larkdale Avenue, Dublin, CA 94568.

Written comments received on the Draft EIR are included in their original format as Appendix A, Comment Letters, of this Response to Comments document. The comments are also reproduced in Chapter 5, Comments and Responses, of this document, and responses to comments on environmental issues are provided.

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.

[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to15387.

The Final EIR will be presented at a regular public Board of Trustees meeting during which the District will advise the Trustee's on certification of the EIR. The Trustees will then consider the District's recommendations on the Final EIR and the proposed project during the meeting and will take final action regarding the Final EIR and the proposed project. The Trustee's are currently scheduled to consider certification of the Final EIR and approval of the proposed project at the public meeting scheduled for September 8th, 2020.

2. *Executive Summary*

This executive summary presents an overview of the proposed New Comprehensive Dublin High School project, located at the southeast corner of Central Parkway and Chancery Lane in the City of Dublin, Alameda County, California, herein referred to as the "proposed project" or "project", and the conclusions of the analysis contained in Chapters 4.1 through 4.18 of the Draft Environmental Impact Report (Draft EIR). This executive summary describes the organization of this document, provides a summary of the proposed project, and lists of each significant effect on the environment (impacts) with the proposed mitigation, if any, that corresponds with the environmental issues discussed in the Draft EIR (see Table 2-1). All information in Table 2-1 is a duplicate of that which was published in the Draft EIR except for Chapter 4.8, Hazards & Hazardous Resources. The mitigation measures in this chapter have been revised pursuant to edits made in Chapter 3, Revisions to the Draft EIR, of this document.

2.1 DOCUMENT ORGANIZATION

This document is organized into the following chapters:

- Chapter 1: Introduction. This chapter discusses the use and environmental review process.
- Chapter 2: Executive Summary. This chapter is a summary of the proposed project and the findings of the Draft EIR and Response to Comments document.
- Chapter 3: Revisions to the Draft EIR. Additional corrections to the text and graphics of the Draft EIR are contained in this chapter. Underline text represents language that has been added to the EIR; text with ~~strikethrough~~ has been deleted from the EIR. These revisions do not contain "significant new information," as defined in the CEQA Guidelines Section 15088.5, which includes new or substantially more severe environmental impacts, or new information indicating that the Draft EIR is fundamentally or basically inadequate.
- Chapter 4: List of Commenters. Names of agencies and individuals who commented on the Draft EIR are included in this chapter.
- Chapter 5: Comments and Responses. This chapter lists the comments received from agencies and the public on the Draft EIR, and provides responses to those comments.
- Chapter 6: Mitigation Monitoring or Reporting Program. This chapter lists the mitigation measures included in the Draft EIR for the proposed project, and identifies programs for monitoring and reporting the progress on implementing these measures.
- Appendix: The appendix for this Response to Comment document (presented in PDF format on a CD attached to the back cover) contain the following supporting document:
  - Appendix A: Comment Letters
  - Appendix B: Transportation – Level of Service Analysis

2.2 SUMMARY OF PROPOSED PROJECT

The proposed school site is a 23.46-acre vacant property located at the southeast corner of Central Parkway and Chancery Lane in the City of Dublin, Alameda County, California (Assessor's Parcel Numbers [APNs] 985-78-2,-3,-4,-5,-6 and-7). The site also includes the areas that make up 0.71 acres of the total 23.46 acres and are identified as part of South Grafton Street and East Finnian Way on Assessor's Map 985 in between APNs 985-78-5,-6. And-7. The City of Dublin is surrounded by San Ramon and unincorporated Contra Costa County to the north, unincorporated Alameda County to the east and west, and Pleasanton and Livermore to the south and southeast, respectively. Regional access to the site is primarily via north-south running Tassajara Road from Interstate 580, located about 0.5 miles west of the site, and east-west running Dublin Boulevard, in the City of Dublin and on which the site is located.

The proposed comprehensive high school would be DUSD's third high school, and second comprehensive high school in the City of Dublin. The proposed school would consist of classrooms, education and administration-related indoor spaces, as well as outdoor physical education, instructional and recreational components. It would include 562 onsite surface parking spaces and internal drop-off and passing lanes designed for onsite traffic flow and reduced queuing at school entrances. Construction of the proposed project would occur on a total of approximately 23.46 acres. The new comprehensive high school is planned to ultimately accommodate approximately 2,545 students and will be built in two phases (Phase I and Phase II).

Project phases would include:

- Phase I: Will accommodate 1,308 students, and will consist of the construction of a 30,110 square foot administration building and kitchen, a 13,811 square foot student union, a 21,004 square foot library, a 31,898 square foot gymnasium, a 17,597 square foot locker room, a 79,673 square foot academy, 18,563 square feet of Visual and Performing Arts Guidance (VAPA) classrooms, a 55,493 square foot all-weather track with drainage, a 96,837 square foot synthetic field with drainage, four overhead field lights, eight tennis courts consisting of 60,719 square feet, and a 135 stall parking garage consisting of 65,529 square feet.
- Phase II: Will accommodate the remaining 1,237 students, and will consist of a second 79,630 square foot academy, a 31,131 square foot theatre, a 831 square foot orchestra pit, a 4,800 square feet maintenance building for the pool, a 1,768 square foot maintenance building, 3,439 square feet of concessions/restrooms, a 34,506 square foot aquatic complex, and 12,733 square feet of 4,000 seat bleachers.

2.3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.[1]

Table 2-1 summarizes the conclusions of the environmental analysis contained in this Draft EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Section 4, Chapters 4.1 through 4.18. The table is arranged in four columns: 1) environmental impacts; 2) significance prior to mitigation; 3) recommended mitigation measures; and 4) significance after mitigation. For a complete description of potential impacts, please refer to the specific discussions in Section 4, Chapters 4.1 through 4.18. As shown in Table 2-1, some significant impacts would be reduced to a less-than-significant level if the mitigation measures recommended in the Draft EIR are implemented.

[1] California Public Resources Code §§ 21060.5 and 21068.

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AESTHETICS			
AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	N/A
AES-2: The proposed project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	NI	N/A	N/A
AES-3: The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The proposed project would not conflict with applicable zoning and other regulations governing scenic quality.	LTS	N/A	N/A
AES-4: The proposed project would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	S	AES-4a: District shall plant supplementary trees and landscaping along the southwestern boundary of the proposed project which, in addition to existing landscaping along the southwestern boundary of the proposed project, will further screen and reduce the introduced light and glare impacts on the southwestern project perimeter. The District shall consult with a landscaping expert prior to the installation and operation of the lighting assemblies to determine the appropriate supplementary trees that would be necessary to reduce light and glare impacts. Appropriate supplementary trees and landscaping shall consider the tree species, number of trees, timing for plantings (i.e. time of day and year) as the addition of new non-deciduous trees could result in temporary shadows in the immediate project vicinity as the trees mature. Once the appropriate additional trees have been determined, the trees shall be planted according to the appropriate season as determined by the landscaping expert, which may be prior to the installation of the lighting assemblies or immediately following. The landscaping type, design, and timing shall be established prior to the installation of the field lights. The supplementary trees and landscaping shall be maintained in perpetuity by the District. AES-4b: The District shall install fencing along the southwestern boundary of the proposed project to reduce the effects of the project lightings light spill. The District shall consult with residents adjacent to the southwestern boundary of the project site prior to the installation and operation of the lighting assemblies to coordinate the appropriate types of fencing to install along the boundary. The fence design, and timing shall be established prior to the installation of the stadium and tennis court lights. AES-4c: Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints. AES-4d: The District shall install Musco brand lights or any other brand that demonstrates comparable or better light performance and shielding of surrounding properties.	SU

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AES-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to aesthetics.	LTS	N/A	N/A
AIR QUALITY			
AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	N/A
AQ-2: Uncontrolled fugitive dust (PM10 and PM2.5) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of BAAQMD's best management practices.	S	AQ-2: The Dublin Unified School District shall specify in the construction agreement that the project contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]): ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible. ▪ Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust. ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways. These measures shall be noted on grading plans prepared by the District. The construction contractor shall implement these measures during ground disturbing activities. The Dublin Unified School District shall verify compliance that these measures have been implemented during normal construction site inspections.	LTS

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AQ-3: Construction activities of the project could expose sensitive receptors to substantial concentrations of TAC, exceeding the applicable cancer risk threshold.	S	AQ-3: The Dublin Unified School District (District) shall specify in the construction agreement that the project construction contractor(s) and subcontractor(s) comply with the following requirements for all off-road equipment greater than 50 hp that will be operating for more than 20 hours over the entire duration of the construction activities at the site: ▪ Have engines that meet either US EPA or California Air Resources Board (CARB) Tier 4 Final emission standards. Ensure that all construction plans submitted to the School District clearly show the selected emission reduction strategy for construction equipment over 50 horsepower. ▪ Maintain a list of all operating equipment in use on the project site for verification by the School District official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Ensure that all equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. ▪ Communicate with all sub-contractors in contracts and construction documents that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with California Air Resources Board Rule 2449 and is responsible for ensuring that this requirement is met.	LTS
AQ-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	N/A	N/A
AQ-5: The proposed project site would not be within 500 feet to the closest traffic lane of a freeway or busy traffic corridor and would not create an air quality health risk due to its placement.	LTS	N/A	N/A
AQ-6: The proposed project would not create an air quality hazard due to the placement of the school site within one-quarter mile of: (a) permitted and non-permitted facilities identified by the jurisdictional air quality control board or air pollution control district; (b) freeways and other busy traffic corridors; (c) large agricultural operations; and/or (d) a rail yard, which might reasonably be anticipated to emit hazardous air emissions, or handle hazardous or acutely hazardous material, substances, or waste.	LTS	N/A	N/A
AQ-7: Implementation of the project would cumulatively contribute to air quality impacts in the Air Basin.	S	AQ-7: Implementation of Mitigation Measures AQ-2 and AQ-3.	LTS

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIOLOGICAL RESOURCES			
BIO-1: The proposed project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive or special status species in local or regional plans, policies, or regulations by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	S	Mitigation Measure BIO-1: Any active bird nests in the vicinity of proposed vegetation removal and grading shall be avoided until young birds are able to leave the nest (i.e., fledged) and forage on their own. Avoidance may be accomplished either by scheduling grading and vegetation removal during the non-nesting period (September through February), or if this is not feasible, by conducting a pre-construction survey for active nests. A pre-construction survey report verifying that no active nests are present, or that nesting has been completed as detailed below, shall be submitted to the District for review and approval prior to initiation of grading or vegetation removal during the nesting season. Provisions of the pre-construction survey and nest avoidance measures, if necessary, shall include the following: ▪ If initial grubbing and grading is scheduled during the active nesting period (March through August), a qualified wildlife biologist shall be retained by the applicant to conduct a pre-construction nesting survey no more than 7 days prior to initiation of grading or vegetation removal to provide confirmation on presence or absence of active nests in the vicinity. ▪ If active nests are encountered, species-specific measures shall be prepared by a qualified biologist through informal consultation with the California Department of Fish and Wildlife (CDFW) and implemented to prevent nest abandonment. At a minimum, vegetation removal and grading in the vicinity of the nest shall be deferred until the young birds have fledged. A nest setback zone of at least 100 feet for raptors and 50 feet for passerine birds shall be established, and all construction-related disturbances shall be prohibited within the nest setback zone. The perimeter of the nest setback zone shall be fenced or adequately demarcated, and construction personnel restricted from the area. ▪ If permanent avoidance of the nest is not feasible, impacts shall be minimized by prohibiting disturbance within the nest setback zone until a qualified biologist verifies either that a) the birds have not begun egg-laying and incubation, or b) the juveniles from the nest are foraging independently and capable of independent survival at an earlier date. ▪ A survey report of findings verifying that any young have fledged shall be submitted for review and approval by the District prior to initiation of grading or vegetation removal in the nest setback zone. Following approval by the District, grading, vegetation removal, and construction in the nest setback zone may proceed as proposed.	LTS
BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	NI	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO-3: The proposed project would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	NI	N/A	N/A
BIO-4: The proposed project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LTS	N/A	N/A
BIO-5: The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	N/A	N/A
BIO-6: The proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan.	NI	N/A	N/A
BIO-7: The proposed project would not result in significant cumulative impacts with respect to biological resources.	LTS	N/A	N/A
CULTURAL RESOURCES			
CULT-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.	NI	N/A	N/A
CULT-2: Implementation of the proposed project would have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.	S	CULT-2a: Worker Training: proposed project personnel shall receive training regarding the appropriate work practices necessary to effectively implement the cultural resources mitigation measures, including the potential for exposing subsurface cultural resources, including human remains. Training shall be required for all personnel before construction commences and repeated for all new personnel before they begin work on the project. This training program shall be submitted to the District for approval at least 30 days before the start of construction and include procedures to be followed upon the discovery or suspected discovery of unique or historic archaeological materials and human remains, consistent with the procedures set forth in Mitigation Measure CULT-2b and CULT-3. CULT-2b: If unique or historical archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the	LTS

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		immediate vicinity of the suspected resources and the District, and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the District for review and approval prior to the continuation of any on-site construction activity.	
CULT-3: Implementation of the proposed project would have the potential to disturb human remains, including those interred outside of formal cemeteries.	S	CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.	LTS
CULT-4: The proposed project would result in less-than-significant cumulative impacts with respect to cultural resources.	LTS	N/A	N/A
ENERGY			
ENE-1: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	N/A	N/A
ENE-2: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	N/A	N/A
ENE-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to energy conservation and renewable energy.	LTS	N/A	N/A
GEOLOGY AND SOILS			
GEO-1i: The proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GEO-1ii: The proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving strong seismic ground shaking.	LTS	GEO-1.1: Implement the recommendations found within the project Geotechnical Engineering Investigation (Appendix E): Groundwater Influence on Structures/Construction: ▪ If groundwater is encountered during construction the relevant authority, such as a soils engineer, shall be consulted prior to dewatering the site. Installation of a standpipe piezometer is suggested prior to construction should groundwater levels be a concern. ▪ In addition to the groundwater level, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. A relevant authority shall be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations. Site Preparation – General: ▪ General site clearing shall include removal of vegetation; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping shall extend to a minimum depth of two to four inches, or until all organics in excess of three percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for use as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas. ▪ It is recommended that compaction test reports be provided to the relevant authority for review. Some of the fill soils had varying strength characteristics ranging from loosely placed to compacted. Therefore, it is recommended that any fill soils which have not been properly compacted and certified be excavated and stockpiled so that the native soil can be properly prepared. Prior to fill placement, the relevant authority shall inspect the bottom of the excavation to verify no additional removal will be required. Supplemental testing shall be performed on the fill soils prior to construction to verify their suitability for use as Engineered Fill. ▪ Demolition activities shall include proper removal of any surface and buried structures. Any buried structures or loosely backfilled excavations encountered during construction shall be properly removed and the resulting excavations backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. ▪ Following stripping, demolition activities, and fill removal operations and/or certification verification, the exposed subgrade in building pad, exterior flatwork, and pavement areas shall be excavated/scarified to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned to at least two percent above optimum moisture, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of	N/A

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		recompaction shall extend 5 feet beyond structural elements. This compaction effort shall stabilize the surface soils and locate any unsuitable or pliant areas not found during the GEI field investigation. ▪ It is recommended that the upper 36 inches of soil within proposed conventional slabs-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill or lime-treated Engineered Fill. The intent is to support slab-on-grade and exterior flatwork areas with 36 inches of non-expansive or lime treated fill. The fill placement serves two functions: 1) it provides a uniform amount of soil which will more evenly distribute the soil pressures and 2) it reduces moisture content fluctuation in the clayey material beneath the building area. The non-expansive fill material shall be a well-graded silty sand or sandy silt soil. The on-site, non-expansive sandy silt and silty sand soils will be suitable for this purpose. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soil below, which may result in soil swelling. Imported Fill shall be approved by the soils engineer prior to placement. The fill shall be placed as specified as Engineered Fill. As an alternative, within exterior flatwork areas, the upper 18 inches of soil can consist of lime-treated clayey soils overlain by four inches of aggregate base. However, some movement of the exterior flatwork may occur with this alternative. ▪ It is recommended that any uncertified fill material encountered within pavement areas be removed and/or recompacted. The fill materials shall be moisture-conditioned to near optimum moisture and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the owner may elect not to recompact the existing fill within paved areas. However, the owner should be aware that the paved areas may settle, which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned to a minimum of two percent above optimum moisture content and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. ▪ Several trees are located within the project site vicinity. If not utilized for the proposed development, tree removal operations shall include roots greater than one inch in diameter. The resulting excavations shall be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. ▪ Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase shall be performed. ▪ Excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels, shall be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. Any buried structures encountered during construction shall be properly removed and backfilled. In general, any septic tanks, debris pits, cesspools, or similar structures shall be entirely removed. Concrete footings shall be removed to an equivalent depth of at least three feet below proposed footing elevations or as recommended by the soils engineer. Any other buried structures shall be removed in accordance with the recommendations of the soils engineer. The resulting excavations shall be backfilled with Engineered Fill.	

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		▪ A relevant authority shall be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is integral as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The soils engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of the GEI report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in the GEI.	
		Supplemental Site Preparation - Geogrid Option	
		▪ Subsurface soils within the site are prone to liquefaction under high groundshaking acceleration during an earthquake. If the potential differential settlement is not acceptable, the proposed structures can be constructed over a geogrid reinforced soil mat. If this option is utilized, the building area shall be excavated to a minimum depth of five feet below the bottom of the deepest foundation and the resulting excavation shall be backfilled with a layered system of Engineered Fill and geogrid reinforcement. The depth of the over-excavation shall be measured from existing ground or rough pad grade, whichever is deeper.	
		▪ The first layer of geogrid reinforcement will be placed directly at the bottom of the excavation. The geogrid material shall be overlapped a minimum of three feet in all directions. The geogrid strips shall be “shingled’ such that the exposed geogrid edge is opposite the direction of fill placement (as roof shingles to rain runoff). The interlock between the geogrid and Engineered Fill will provide load transfer. No vehicles may traverse the geogrid prior to placement of the Engineered Fill cover.	
		▪ The next layer of geogrid shall be placed on top of the compacted Engineered Fill. This and subsequent layers need only be overlapped a minimum of one foot on all sides. The geogrid strips of this layer, and all subsequent layers within the footprint, shall be placed with lengths perpendicular to those in the layer immediately below. The fill soils excavated from the area beneath the structure may be moisture-conditioned and recompacted between geogrid layers as reinforced fill. The reinforced fill shall be conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method.	
		▪ A total of five geogrid layers, including the layer at the base of the excavation, shall be installed at vertical increments of one foot. The geogrid layers shall extend to a minimum of five feet beyond the exterior footing perimeter of the structure. The geogrid reinforcement fabric shall consist of Tensar® BX 6100 Geogrid, TriAx TX-5 or equivalent. Any unstable soils within building areas shall be excavated and backfilled with Engineered Fill as requested by the soil engineer.	
		▪ It is recommended that each building site be excavated at once, and soils be stockpiled. The geogrid and excavated soil may then be placed and recompacted as recommended herein.	
		▪ Alternatively, the contractor may elect to excavate the site in two stages, where excavated soil can be stockpiled over one half of the site while the other half is mitigated. However, if the contractor elects the option of two stages over the preferred option of using one stage, a minimum of five feet of	

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		geogrid from the first half shall overlap the second half. Furthermore, the overlapping geogrid shall be protected from damages, which may be caused by operating equipment. It is further recommended that flexible utility connections be used for the project. Engineered Fill ▪ The organic-free, on-site, upper, native and fill soils are predominately sandy clay, gravelly sandy clay, clayey sand, silty clay, and sandy clay with a trace of gravel. The clayey soils will not be suitable for reuse as non-expansive Engineered Fill. These clayey soils will be suitable for reuse for fill placement within the upper 36 inches of conventional slab-on-grade and exterior flatwork areas, provided they are lime-treated. The preliminary application rate of lime shall be five percent by dry weight. The lime material shall be calcium oxide, commonly known as quick-lime. The clayey soils shall be at or near optimum moisture content during mixing operations. Additional testing is recommended to determine the appropriate application rate of lime prior to placement. These clayey soils will be suitable for reuse as General Engineered Fill, provided they are moisture-conditioned to at least two percent above optimum moisture. ▪ The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase shall be the sole responsibility of the contractor, since he has complete control of the project site at that time. ▪ Imported Fill shall consist of a well-graded, slightly cohesive, fine silty sand or sandy silt, with relatively impervious characteristics when compacted. This material shall be approved by the soils engineer prior to use and shall typically possess the following characteristics: 20 to 50 percent passing No. 200 sieve, 10 maximum plasticity index, 15 maximum UBC standard 29-2 expansion index. ▪ Fill soils shall be placed in lifts approximately six inches thick, moisture-conditioned to a minimum of two percent above optimum moisture content, and compacted to achieve at least 90 percent of maximum density as determined by ASTM Test Method D1557. Additional lifts shall not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. Drainage and Landscaping ▪ The ground surface shall slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of five percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations shall be sloped a minimum of two percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations shall be sloped a minimum of one percent away from the structure. Drainage gradients shall be maintained to carry all surface water to collection facilities and off-site. These grades shall be maintained for the life of the project.	

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		▪ Slots or weep holes shall be placed in drop inlets or other surface drainage devices in pavement areas to allow free drainage of adjoining base course materials. Cutoff walls shall be installed at pavement edges adjacent to vehicular traffic areas; these walls shall extend to a minimum depth of six inches below pavement subgrades to limit the amount of seepage water that can infiltrate the pavements. Where cutoff walls are undesirable, subgrade drains can be constructed to transport excess water away from planters to drainage interceptors. If cutoff walls can be successfully used at the site, construction of subgrade drains is considered unnecessary. Utility Trench Backfill ▪ Utility trenches shall be excavated according to accepted engineering practices following Occupational Safety and Health Administration (OSHA) standards by a contractor experienced in such work. The responsibility for the safety of open trenches shall be borne by the contractor. Traffic and vibration adjacent to trench walls shall be reduced; cyclic wetting and drying of excavation side slopes shall be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced, especially during or shortly following periods of precipitation. ▪ Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils. ▪ Utility trench backfill placed in or adjacent to buildings and exterior slabs shall be compacted to at least 90 percent of the maximum density based on ASTM Test Method D1557. The utility trench backfill placed in pavement areas shall be compacted to at least 90 percent of the maximum density based on ASTM Test Method D1557. Pipe bedding shall be in accordance with pipe manufacturer's recommendations. ▪ The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The contractor shall use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction. Foundations – Conventional ▪ The proposed structures may be supported on a shallow foundation system, bearing on a minimum of 24 inches of Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures: 1,875 per square foot (psf) for dead load only, 2,500 psf for dead-plus-live load, or 3,325 psf for total load, including wind or seismic loads. ▪ Exterior footings shall have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Interior footings shall have a minimum depth of 12 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings shall have a minimum width of 12 inches, regardless of load.	

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		▪ The footing excavations shall not be allowed to dry out any time prior to pouring concrete. It is recommended that footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom. Foundations - Post-Tension or Structural Slab ▪ The buildings may be supported on a post-tension slab or structural slab/foundation system. A structural slab system will help reduce structural damage caused by the potential soil movement of the clayey soils and potential settlement associated with seismic settlement. In addition, utilization of a post-tensioned slab will eliminate the requirement for 36 inches of non-expansive or lime-treated Engineered Fill below slab-on-grade. However, the previously recommended densification of the upper native soils and fill material at the site shall still be performed. In addition, the moisture content of the upper 12 inches of subgrade soil below the post-tensioned slabs shall be increased to a minimum of three percent above optimum moisture content prior to pouring the slabs. The moisture content shall be verified by relevant authorities office within 48 hours of pouring the slabs. ▪ The thickness of the slab-on-grade and locations and sizing of stiffening beams (if used) shall be determined by the structural consultant during a subsequent structural analysis, which incorporates the GEI design recommendations, including a deepened perimeter or edge section. Post-tensioned slab-on-grade foundations shall be structurally designed to resist or distribute the stresses that are anticipated to develop as the result of supporting soil movement. ▪ To aid in reducing the potential for differential soil movement associated with shrinkage and swelling of the fine-grained soils due to changes in moisture contents with changing seasons and landscaping, it is recommended that the exterior edge of the slab be deepened to provide a moisture cut-off around the perimeter of the building. The deepened edge shall extend at least 18 inches below the top of the pad grade, where the top of pad grade is defined as the grade beneath the bottom of the capillary moisture break gravel course or the adjacent exterior subgrade, whichever is deeper. In addition, the slab shall be designed to withstand a potential total and differential static settlement of four inches and two and two thirds inches, respectively. ▪ Slabs adjacent to landscape areas may be subject to additional distress due to increased soil moisture level fluctuations from flowerbed watering, as well as drying from tree root moisture removal. Therefore, we recommend that the school district be notified of the potential for soil movement and resulting slab distress which may occur in these instances of landscape neglect. ▪ In addition, it is recommended the school site maintain consistent moisture levels and avoid extreme fluctuations in any flowerbeds adjacent to structures, and to avoid planting trees with invasive root systems within 10 feet of the structures. ▪ The thickness of the slab-on-grade and locations and sizing of stiffening beams (if used) shall be determined by the project structural engineer. Post-tensioned concrete slabs designed to be of uniform thickness without interior stiffening beams shall be designed in accordance with the	

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Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		procedures presented in Design of Post-Tensioned Slabs-on-Ground. Perimeter columns located outside of the main structure, such as those required for covered terraces or second floor areas projecting out beyond the building footprint shall not be founded on isolated spread footings structurally separated from the slab foundation. ▪ The post-tensioned slab-on-grade foundation system will not prevent the structure from undergoing vertical displacement as a result of shrinkage and swelling of the underlying expansive soils. However, the use of a post-tensioned slab-on-grade foundation system, as opposed to a conventionally reinforced non-structural slab-on-grade, will reduce the amount of objectionable slab cracks and vertical off-set of adjacent concrete panels. However, cracking and distress in brittle finishes, such as stucco and drywall should be anticipated. The use of post-tension reinforcement does not necessarily eliminate the development of bending stresses in the slab due to differential movement of the supporting soils. This type of slab essentially distributes the differential movement of the supported structure over a longer span through controlled bending of the slab. Floor Slabs and Exterior Flatwork ▪ Concrete slab-on-grade shall be appropriate for this project. In areas where it is desired to reduce floor dampness, such as office areas, slab-on-grade construction shall have a water vapor retarder incorporated into the floor slab design. In areas that will utilize moisture-sensitive floor coverings, concrete slab-on-grade floors shall be underlain by a water vapor retarder. The water vapor retarder shall be installed in accordance with accepted engineering practice. The water vapor retarder shall consist of a vapor retarder sheeting underlain by a minimum of three inches of compacted, clean, open graded coarse rock of three quarter of an inch maximum size. ▪ The floor slab shall be reinforced as a minimum with No. 3 reinforcement bars at 18 inches on-center, each way, within the floor slabs middle-third. Thicker floor slabs with increased concrete strength and reinforcement shall be designed wherever large vehicular loads, heavy concentrated loads, heavy equipment, or machinery is anticipated. ▪ The exterior floors shall be poured separately in order to act independently of the walls and foundation system. Exterior finish grades shall be sloped a minimum of one to one and a half percent away from all interior slab areas to preclude ponding of water adjacent to the structures. All fills required to bring the building pads to grade shall be Engineered Fills. Lateral Earth Pressures and Retaining Walls ▪ Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 50 pounds per square foot per foot of depth. Walls incapable of this deflection or are fully constrained walls against deflection may be designed for an equivalent fluid at-rest pressure -of 70 pounds per square foot per foot of depth. Expansive soils shall not be used for backfill against walls.	

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		▪ The wedge of non-expansive backfill material shall extend from the bottom of each retaining wall outward and upward at a slope of 2: 1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations or roadways. ▪ During grading and backfilling operations adjacent to any walls, heavy equipment shall not be allowed to operate within a lateral distance of five feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment (“whackers”, vibratory plates, or pneumatic compactors) shall be used to compact the backfill soils. ▪ Retaining and/or below grade walls shall be drained with either perforated pipe encased in free draining gravel or a prefabricated drainage system. The gravel zone shall have a minimum width of 12 inches wide and shall extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill shall consist of native soils, concrete, asphaltic concrete or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate shall conform to Class 2 permeable materials graded in accordance with Section 68-2.02F(3) of the Caltrans Standard Specifications (2018). Prefabricated drainage systems such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, a relevant authority shall review the system for final acceptance prior to installation. ▪ Drainage pipes shall be placed with perforations down and shall discharge in a non-erosive manner away from foundations and other improvements. The pipes shall be placed no higher than six inches above the heel of the wall in the centerline of the drainage blanket and shall have a minimum diameter of four inches. Collector pipes may be either slotted or perforated. Slots shall be no wider than half an inch in width, while perforations shall be no more than a quarter inch in diameter. If retaining walls are less than six feet in height, the perforated pipe may be omitted in lieu of weep holes on four feet maximum spacing. The weep holes shall consist of four inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two eight inch square overlapping patches of geotextile fabric (conforming to Section 88-1.02 of the Caltrans Standard Specifications for “edge drains”) shall be affixed to the rear wall opening of each weep hole to retard soil piping. R-Value Test Results and Pavement Design ▪ If traffic indices are not available, an estimated (typical value) index of 4.5 may be used for light automobile traffic, and an index of 7 .0 may be used for light truck traffic. ▪ As indicated previously, fill material is located throughout the site. It is recommended that any uncertified fill material encountered within pavement areas be removed and/ or recompacted. The fill	

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Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		material shall be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the owner may elect not to recompact the existing fill within paved areas. However, the owner shall be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned as necessary and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Soil Cement Reactivity ▪ It is recommended a Type II cement be utilized to compensate for sulfate reactivity with the cement. Compacted Material Acceptance ▪ Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the grading contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The soils engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded. Testing and Inspection ▪ A relevant authority shall be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Grades or staking are the responsibility of the prime contractor. Limitations ▪ It is suggested that two years be considered a reasonable time for the usefulness of the GEI. ▪ If any variations or undesirable conditions are encountered during construction, the soils engineer shall be notified so that supplemental recommendations may be made. Significance with Mitigation: Less than significant.	

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GEO-1iv: The proposed project would result in the placement of new buildings in areas susceptible to ground failure in the form of liquefaction, potentially resulting in significant loss, injury, or death.	S	GEO-1.2: Implementation of Mitigation Measure GEO-1.1.	LTS
GEO-1v: The proposed project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving landslides, mudslides, or other similar hazards.	LTS	LTS	LTS
GEO-2: The proposed project could result in substantial soil erosion or the loss of topsoil.	PS	GEO-2a: To minimize potential impacts of erosion during site development, the proposed project would be required to comply with the Statewide General Construction Permit as well as prepare a stormwater pollution prevention plan that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Because the project would disturb one or more acres, coverage under the Statewide General Construction Permit would apply. The General Construction Permit also requires that, prior to the start of construction activities, the project applicant must file Permit Registration Documents with the State Water Resources Control Board, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, stormwater pollution prevention plan, and post-construction water balance calculations. Densification of upper native soils and fill material should also be performed. GEO-2b: Implementation of Mitigation Measure GEO-1.1.	LTS
GEO-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	S	GEO-3: Implementation of Mitigation Measure GEO-1.1.	LTS
GEO-4: The project could be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	PS	GEO-4: Implementation of Mitigation Measure GEO-1.1.	LTS
GEO-5: The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	LTS	N/A	N/A
GEO-6: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	GEO-6: In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed	LTS

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Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the District for review and approval prior to implementation.	
GEO-7: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to geology and soils.	LTS	N/A	N/A
GREENHOUSE GAS EMISSIONS			
GHG-1: The proposed project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	S	GHG-1a: The Dublin Unified School District shall specify the installation of a photovoltaic system to offset as much electricity usage as feasible from operation of the high school. GHG-1b: The Dublin Unified School District shall design the proposed school to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces shall be equal to the Tier 2 Nonresidential Voluntary Measures of California's Green Building Standards Code Section A5.106.5.1.2. GHG-1c: The Dublin Unified School District shall design the proposed school to provide electric vehicle (EV) charging stations. At minimum, the number of EV charging stations shall equal to the Tier 2 Nonresidential Voluntary Measures of California's Green Building Standards Code Section A5.106.5.3.2.	SU
GHG-2: The proposed project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	N/A
GHG-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to greenhouse gas emissions.	S	GHG-3: Implementation of Mitigation Measures GHG-1a, 1b, and 1c.	SU
HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: The project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.	LTS	N/A	N/A
HAZ-2: The project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	N/A	LTS

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HAZ-3: The project would not emit hazardous emissions or handle hazardous materials, substances or waste within ¼-mile of an existing or proposed school.	LTS	N/A	N/A
HAZ-4: The project would not be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.	LTS	N/A	LTS
HAZ-5: The proposed school site falls inside Safety Zone 7, identified as the Airport Influence Area (AIA) which, although at a low risk from proximity to the airport, requires discretionary approval.	S	HAZ-5: The ALUCP guidance states that an avigation easement, restricting the heights of structures or trees, should be dedicated to the City of Livermore as a condition for any discretionary local approval for any property within the AIA. The avigation easement shall: ▪ Identify the potential hazard associated with the proposed project and its location within protected airspace; ▪ Identify the airport owner's right to clear or maintain the airspace from potential hazards; ▪ Identify the right to mark potential obstructions and notify aviators of such hazards of such hazards; and ▪ Provide the right to pass within the identified airspace.	LTS
HAZ-6: Temporary modifications to Dublin Boulevard and Central Parkway during construction may temporarily interfere with emergency response.	S	HAZ-6: Implementation of Mitigation Measure TRANS-4.	LTS
HAZ-7: The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	LTS	N/A	N/A
HAZ-8: The proposed project would not result in cumulative impacts with respect to hazards and hazardous materials.	LTS	N/A	N/A
HYDROLOGY AND WATER QUALITY			
HYD-1: The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	N/A	N/A
HYD-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	N/A	N/A

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Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HYD-3: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows.	LTS	N/A	N/A
HYDRO-4: The proposed project would not in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	NI	N/A	N/A
HYDRO-5: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	N/A	N/A
HYDRO-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to hydrology and water quality.	LTS	N/A	N/A
LAND USE AND PLANNING			
LU-1: The proposed project would not physically divide an established community.	LTS	N/A	N/A
LU-2: The proposed school site falls inside Safety Zone 7 of the AIA, which requires that an avigation easement restricting the heights of structures or trees be dedicated to the City of Livermore as a condition for discretionary local approval of projects within the AIA.	S	LU-2: Implementation of Mitigation Measure HAZ-5.	LTS
LU-3: The proposed project would result in less-than-significant cumulative impacts with respect to land use and planning.	LTS	N/A	N/A

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NOISE			
NOI-1: Traffic associated with operation of the proposed project would result in a substantial permanent noise increase.	S	No individual measure and no set of feasible or practical mitigation measures are available to reduce project-generated traffic noise to less than significant levels along Central Parkway.	SU
NOI-1.2: Operation of the stadium and outdoor recreational activities would result in a substantial periodic noise increase.	PS	NOI-1.2: Prior to holding the first spectator event, the District shall develop and enforce a good-neighbor policy for sports field events. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, loud activity in parking lots upon exiting the field), and events shall be monitored and enforced by the District staff. In addition, the following measures shall be implemented: ▪ During subsequent design phases of the bleachers and PA system, the District's sound system contractor shall create a Stadium Sound System Design Plan. The project's sound system design goal will be to optimize conveying information to the event attendees while minimizing off-site spill-over effects. Design measures include, but are not limited to, bandwidth and peak limiter installation, speaker angle and directivity, and setting a maximum noise level at the PA control console. ▪ Prior to the first sports field event, the public address system contractor shall perform a system check-out to verify appropriate sound levels in the seating areas, as well as minimized spill-over sound levels into the adjacent community areas.	SU
NOI-1.3: Construction activities would result in a substantial temporary noise increase.	S	NOI-1.3: The project sponsor shall incorporate the following practices into the construction contract agreement documents to be implemented by the construction contractor during the entire construction phase of the project: ▪ The project sponsor and contractors shall prepare a Construction Noise Control Plan. The details of the Construction Noise Control Plan shall be included as part of the permit application drawing set and as part of the construction drawing set. ▪ Limit construction to daytime hours (7:00 a.m. to 7:00 p.m.) and prohibit construction on Sundays and holidays. ▪ At least 30 days prior to the start of construction activities, all off-site businesses and residents within 500' of the project site shall be notified of the planned construction activities. The notification shall include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification shall include the telephone numbers of the District's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. ▪ At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the District's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's	LTS

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Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the District. ▪ Erect a temporary noise barrier between the construction zone and adjacent residences along the eastern and western project boundaries. The temporary sound barrier shall have a minimum height of 12 feet and be free of gaps and holes. The barrier can be (a) a ¾-inch-thick plywood wall OR (b) a hanging blanket/curtain with a surface density or at least 2 pounds per square foot. ▪ During the entire active construction period, equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. ▪ Require the contractor to use impact tools that are hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools. ▪ During the entire active construction period, stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible. ▪ The District shall select haul routes that avoid the greatest amount of sensitive use areas. ▪ Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.	
NOI-2: The project could generate excessive groundborne vibration levels.	PS	NOI-2: The use of a static roller in place of a vibratory roller will be used to reduce vibration levels below the performance standard of 0.2 in/sec PPV if paving is required within 25 feet of off-site residential buildings.	LTS
NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	LTS	N/A	N/A
NOI-4: The project, in combination with past, present, and reasonably foreseeable projects, would result in significant cumulative impacts with respect to noise.	S	No individual measure and no set of feasible or practical mitigation measures are available to reduce project-generated traffic noise to less than significant levels.	SU

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
POPULATION AND HOUSING			
POP-1: The proposed project would not induce substantial unplanned population growth or growth for which inadequate planning has occurred in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	LTS	N/A	N/A
POP-2: The proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.	NI	N/A	N/A
POP-3: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to population and housing.	LTS	N/A	N/A
PUBLIC SERVICES			
PUB-1: The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.	LTS	N/A	N/A
PUB-2: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to fire protection services.	LTS	N/A	N/A
PUB-3: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain	LTS	N/A	N/A

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
acceptable service ratios, response times, or other performance objectives for police services.			
PUB-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to police services.	LTS	N/A	N/A
PUB-5: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools.	NI	N/A	N/A
PUB-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to schools.	NI	N/A	N/A
PUB-7: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks and recreational facilities.	LTS	N/A	N/A
PUB-8: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to parks and recreational facilities.	LTS	N/A	N/A

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
PUB-9: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for libraries.	LTS	N/A	N/A
PUB-10: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to libraries.	LTS	N/A	N/A
RECREATION			
REC-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	N/A	N/A
REC-2: The project would include recreational facilities or require the construction or expansion of recreational facilities which have an adverse physical effect on the environment.	S	Implementation of Mitigation Measures AES-4a, 4b, 4c, 4d, and NOI-1.2.	SU
REC-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact regarding parks and recreation.	LTS	N/A	N/A
TRANSPORTATION AND TRAFFIC			
TRANS-1.1: The proposed project would not conflict with any plans, policies, ordinances, or regulations pertaining to public transit and thus no significant adverse impacts related to public transit are anticipated.	LTS	N/A	N/A
TRANS-1.2: The project does not include a Class I connection through the project site along the Finnian Way alignment between Chancery Lane and Fitzwilliam Street and is thus inconsistent with the City's Bicycle and Pedestrian Master Plan.	S	TRANS-1.2: The applicant shall provide a Tier 2 Class I path through the project site from Chancery Lane to Fitzwilliam Street along the Finnian Way right-of-way.	LTS

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-1.3: The project does not provide sufficient bicycle parking in accordance with current code requirements.	PS	TRANS-1.3: Provide at least 90 bicycle parking spaces, with a minimum of 72 student bicycle spaces and a minimum of 18 staff bicycle spaces at the project site. Provide a minimum of two permanent, secure bicycle parking spaces per new building meeting one of the following per the California Green Building Standards Code section 5.106.4.2.2: ▪ Covered, lockable enclosures with permanently anchored racks for bicycles ▪ Lockable bicycle rooms with permanently anchored racks ▪ Lockable, permanently anchored bicycle lockers	LTS
TRANS-1.3: The proposed project would not conflict with any plans, policies, ordinances, or regulations pertaining to pedestrian facilities or travel and thus no significant adverse impacts are anticipated.	LTS	N/A	N/A
TRANS -1.5: The proposed project would not conflict with any plans, policies, ordinances, or regulations pertaining to the roadway system and thus no significant adverse impacts related to roadways were identified.	LTS	N/A	N/A
TRANS-2: The proposed project would not conflict with CEQA Guidelines Section 15064.3, subdivision (b)(1). The expected trip length for project students is less than the average trip length of school-based student trips within Alameda County, and the Tri-Valley area.	LTS	N/A	N/A
TRANS-3.1: The increase of pedestrian activity increases the potential for vehicle and pedestrian conflicts.	PS	TRANS-3.1a: The project shall install enhanced school crosswalks at Central Parkway and Grafton Street as well as Chancery Lane and Dunmore Lane. TRANS-3.1b: The project shall install northbound and southbound protective left-turn phasing at the signalized intersection of Central Parkway and Grafton Street to reduce the potential for pedestrian and vehicle conflict.	LTS
TRANS-3.2: The proposed design may compromise driveway sight distance.	PS	TRANS-3.2: The final site plan for the project will be analyzed by the project's Civil Engineer to ensure that adequate sight distance is maintained at all driveways. No objects (landscaping, monument signs, etc.) greater than three feet in height will be allowed within the sight distance triangles at driveway intersections. The project's Civil Engineer will review available speed survey information from the City and adjust required sight distance if required in order to comply with applicable sight distance standards.	LTS
TRANS -3.3: The proposed design may cause an unsafe movement when exiting the site at the project driveway located on Dublin Boulevard.	PS	TRANS-3.3: Provide bollards as a vertical barrier for the westbound left turn lane at Dublin Boulevard and Grafton Street to deter vehicles exiting the site to cross multiple lanes of traffic.	LTS

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
TRANS -3.4: The proposed design near the first proposed driveway east of Chancery Lane would be used as a drop off and pick up zone. Loading and unloading activities in this area would create additional conflicts areas with heavy flows of vehicle, bicycle, and pedestrian traffic in this area.	PS	TRANS-3.4: Modify the proposed project to keep the existing bulb out at the bus stop in its current location. Remove the bulb out at the project driveway and stripe a right turn pocket on Central Parkway turning into the project site.	LTS
TRANS -3.5: The proposed design has Insufficient clear throat depth, for vehicles exiting the project site at this location could potentially conflict with heavy flows of vehicle, bicycle, and pedestrian traffic.	PS	TRANS-3.5: Modify the proposed design at Central Parkway and Grafton Street to provide a minimum throat depth of 100 feet (approximately four vehicles) for vehicles entering and exiting the site.	LTS
TRANS -3.6: Several circulation areas within the project site pose the potential for conflicts between vehicles, pedestrians and bicycles, potentially causing a safety hazard.	PS	TRANS-3.6a: A loading and unloading area with one lane is proposed just north of Building A. To provide for safe and efficient access, the project shall stripe the drop-off area to include two lanes, with one lane dedicated and striped for drop-off and pick-up, and one lane dedicated for passing. TRANS-3.6b: A bi-directional loading and unloading area is proposed just north of the Gymnasium Building M. To provide for safe and efficient access, the project shall restripe the area to be one way with two lanes, one lane for drop-off and pick-up and one lane dedicated for passing. TRANS-3.6c: An on-site intersection is proposed just south of the Central Parkway and Grafton Street project driveway. The proposed configuration does not align with the driveway and provides for an angled off-set intersection. To provide for safe and efficient on-site circulation, the project shall reconfigure and realign this intersection to align with the project driveway and implement side-street stop-control for vehicles leaving the drop-off area just north of Building A. Under this type of intersection control, vehicles leaving the drop off area will be required to stop. "Keep Clear" pavement marking should be installed at this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site. TRANS-3.6d: An on-site intersection is proposed just north of the Dublin Boulevard driveway that the project will reconfigure for modified circulation. To improve safety and circulation for vehicles, pedestrians, and bicycles at this location, the project shall extend the landscaped island adjacent to the furthest south ADA parking spot to connect to the adjacent island, install a landscaped island just north of the existing southeastern island, and direct vehicles with signs using the loading and unloading area to travel counterclockwise around the southerly parking lot.	LTS

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
TRANS-4: The proposed project would result in temporary modifications to Dublin Boulevard and Central Parkway during construction which may interfere with emergency vehicle response times and routes.	PS	TRANS-4: Preparation of a traffic management plan (TMP), which would: ▪ Provide notice to relevant emergency services, thereby avoiding interference with adopted emergency plans, emergency vehicle access, or emergency evacuation plans. ▪ Identify locations of staging areas, construction worker parking, and off-site parking staging areas, as necessary. ▪ Provide a point of contact for City of Dublin residents to obtain construction information, have questions answered, and convey complaints, as related to construction impacts to traffic. ▪ Identify the traffic controls and methods proposed during each phase of the project construction and the provision of safe and adequate access for vehicles, transit, bicycles, and pedestrians. Traffic controls and methods employed during construction shall be in accordance with City of Dublin standards and the requirements of the Manual of Uniform Traffic Control Devices (FHWA, 2009 MUTCD with Revisions 1 and 2, May 2012). The TMP shall identify safe access points, routes of travel and other means of access and circulation. ▪ Maintain bicycle and pedestrian access along the project frontage on the east-west thoroughfare on Dublin Boulevard and Central Parkway during construction, when feasible. When infeasible, provide appropriate pedestrian and bicycle detours with adequate signing and striping.	LTS
TRANS-5: The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to transportation and traffic.	LTS	N/A	N/A
TRIBAL CULTURAL RESOURCES			
TRI-1.1: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.	S	TRI-1.1a: Implementation of Mitigation Measure CULT-2a. TRI-1.1b: Implementation of Mitigation Measure CULT-2b.	LTS
TRI-1.2: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.	S	TRI-1.2: Implementation of Mitigation Measure CULT-3.	LTS
TRI-2: The proposed project would result in less-than-significant cumulative impacts with respect to tribal cultural resources.	LTS	N/A	N/A

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
UTILITIES AND SERVICE SYSTEMS			
UTIL-1: The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LTS	N/A	N/A
UTIL-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	LTS	N/A	N/A
UTIL-3: The proposed project would result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	N/A	N/A
UTIL-4: The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	N/A	N/A
UTIL-5: The proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	N/A	N/A
UTIL-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to utilities and service systems.	LTS	N/A	N/A

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
WILDFIRE			
WILD-1: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan.	LTS	N/A	N/A
WILD-2: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.	LTS	N/A	N/A
WILD-3: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.	LTS	N/A	N/A
WILD-4: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.	LTS	N/A	N/A
WILD-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to wildfires.	LTS	N/A	N/A

3. *Revisions to the Draft EIR*

This chapter includes text revisions to the Draft EIR that were made in response to public, agency, and organization comments, as well as staff-directed changes. These text revisions include typographical corrections, insignificant modifications, amplifications and clarifications of the Draft EIR. In each case, the revised page and location on the page is presented, followed by the textual, tabular, or graphical revision. Underlined text represents language that has been added to the EIR; text with ~~strikethrough~~ represents language that has been deleted from the Draft EIR. None of the revisions to the Draft EIR constitutes significant new information as defined in CEQA Guidelines Section 15088.5; therefore, the Draft EIR does not need to be recirculated.

CHAPTER 1, EXECUTIVE SUMMARY

The text under Section 1.3, Project Summary, within the third sentence on page 1-4 of the Draft EIR is hereby amended as follows:

~~It would include 559 onsite surface parking spaces and internal drop-off and passing lanes designed for onsite traffic flow and reduced queuing at school entrances.~~

It would include 562 onsite surface parking spaces and internal drop-off and passing lanes designed for onsite traffic flow and reduced queuing at school entrances.

The text under Table 1-1, Summary of Impacts and Mitigation Measures for AES-4c under the Mitigation Measures column, on pages 1-9 and 1-10 of the Draft EIR is hereby amended as follows:

~~The District shall adhere to a schedule for which lighting assemblies associated with the tennis courts shall be shut off by 9 pm daily. If the District alters the timing schedule for the tennis court lighting, the residents adjacent to the southwestern boundary of the project site shall be consulted.~~

Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints.

The text under Table 1-1, Summary of Impacts and Mitigation Measures for AQ-2 within the first sentence under the Mitigation Measures column, on page 1-10 of the Draft EIR is hereby amended as follows:

~~in the construction bid~~

in the construction agreement

The text under Table 1-1, Summary of Impacts and Mitigation Measures for AQ-3 within the first sentence under the Mitigation Measures column, on page 1-11 of the Draft EIR is hereby amended as follows:

~~in the construction bid~~

in the construction agreement

The text under Table 1-1, Summary of Impacts and Mitigation Measures for HAZ-2, on page 1-28 of the Draft EIR is hereby amended as follows:

~~PS, HAZ-2: The proposed project shall implement recommendations outlined in the approved project PEA., LTS.~~

LTS, N/A, N/A.

The text under Table 1-1, Summary of Impacts and Mitigation Measures for HAZ-4, on page 1-28 of the Draft EIR is hereby amended as follows:

~~PS, HAZ-4: Implementation of Mitigation Measure HAZ-2., LTS.~~

LTS, N/A, N/A.

The text under Table 1-1, Summary of Impacts and Mitigation Measures for HAZ-6, on page 1-29 of the Draft EIR is hereby amended as follows:

~~HAZ-6: Implementation of Mitigation Measure TRANS-4.1.~~

HAZ-6: Implementation of Mitigation Measure TRANS-4.

CHAPTER 4.1, AESTHETICS

The text under Section 4.1, Aesthetics, within Mitigation Measure AES-4c on page 4.1-20 of the Draft EIR is hereby amended as follows:

~~The District shall adhere to a schedule for which lighting assemblies associated with the tennis courts shall be shut off by 9 pm daily. If the District alters the timing schedule for the tennis court lighting, the residents adjacent to the southwestern boundary of the project site shall be consulted.~~

Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints.

The text under Section 4.1, Aesthetics, after the second sentence of the Automotive Lighting Impacts section on page 4.1-21 of the Draft EIR is hereby amended as follows:

~~However, the nighttime lighting associated with these automobiles is not a new source of light or a source of light which is currently uncommon to the area.~~

However, the nighttime lighting associated with these automobiles is not a new source of light or a source of light which is currently uncommon to the area and is not considered a significant impact. Nevertheless, it would cause an increase of nighttime light over existing conditions. The proposed project includes landscaping around the perimeter of the site, as well as some fencing to separate the project boundary from the surrounding sidewalk and roadway. Landscaping at the southeastern boundary of the parking lot would be sufficiently heighted so as to avoid and minimize potential light spill into the adjacent nearby residences.

CHAPTER 4.2, AIR QUALITY

The text under 4.2, Air Quality, within the first sentence of Mitigation Measure AQ-2 on page 4.2-25 of the Draft EIR is hereby amended as follows:

~~in the construction bid.~~

in the construction agreement

The text under 4.2, Air Quality, within the first sentence of Mitigation Measure AQ-3 on page 4.2-28 of the Draft EIR is hereby amended as follows:

~~in the construction bid.~~

in the construction agreement

CHAPTER 4.5, ENERGY

The text under Section 4.5, Energy, in the third sentence of the first paragraph within the East Bay Community Energy subsection on page 4.5-7 of the Draft EIR is hereby amended as follows:

~~Brilliant Choice.~~

Bright Choice.

CHAPTER 4.6, GEOLOGY AND SOILS

The text under Section 4.6, Geology and Soils, Mitigation Measure GEO-5 under GEO-6 on page 4.6-21 of the Draft EIR is hereby amended as follows:

~~Mitigation Measure GEO-5:~~

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Mitigation Measure GEO-6:

CHAPTER 4.8, HAZARDS & HAZARDOUS RESOURCES

The text under Section 4.8, Hazards & Hazardous Resources, in the last sentence of the first paragraph on page 4.8-10 of the Draft EIR is hereby amended as follows:

~~It is expected that the DTSC will concur with and approve of the findings within the PEA, and subsequently the District will abide by the recommendations and conclusions outlined in the approved PEA.~~[14]

In a letter to the District on July 28th, 2020, the DTSC concurred with the conclusion of the PEA Report that no further action is required at the site and thereby approved the PEA Report as final.[1]

The text under Section 4.8, Hazards & Hazardous Resources, in the last two sentences of the first paragraph on page 4.8-15 of the Draft EIR is hereby amended as follows:

~~It is expected that the DTSC will concur with and approve of the findings within the PEA, and subsequently the District will abide by the recommendations and conclusions outlined in the approved PEA. Because the PEA is still in the approval process, this would be considered a *potentially significant* impact, pending approval.~~

In a letter to the District on July 28th, 2020, the DTSC concurred with the conclusion of the PEA Report that no further action is required at the site and thereby approved the PEA Report as final.[2] Therefore, as the final PEA is approved by DTSC with a no further action determination, this impact would be considered *less than significant.*

The text under Section 4.8, Hazards & Hazardous Resources, Significance finding, Impact HAZ-2, and Mitigation Measure HAZ-2 on page 4.8-15 of the Draft EIR is hereby amended as follows:

~~Significance without Mitigation: Potentially significant.~~

~~Impact HAZ-2: The proposed project PEA is subject to the findings and recommendations pending DTSC approval.~~

~~Mitigation Measure HAZ-2: The proposed project shall implement recommendations outlined in the approved project PEA.~~

~~Significance With Mitigation: Less than Significant.~~

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[1] Department of Toxic Substances Control, 2020, Preliminary Environmental Assessment Report – No Further Action Determination, Dublin Unified School District, New 2nd Comprehensive High School (AKA Promenade Site), Southeast Corner of Central Parkway and Chancery Lane, Dublin, Alameda County (Project Code 204318).

[2] Department of Toxic Substances Control, 2020, Preliminary Environmental Assessment Report – No Further Action Determination, Dublin Unified School District, New 2nd Comprehensive High School (AKA Promenade Site), Southeast Corner of Central Parkway and Chancery Lane, Dublin, Alameda County (Project Code 204318).

Significance Without Mitigation: Less than Significant.

The text under Section 4.8, Hazards & Hazardous Resources, in the last two sentences of the second paragraph on page 4.8-17 of the Draft EIR is hereby amended as follows:

~~It is expected that the DTSC will concur with and approve of the findings within the PEA, and subsequently the District will abide by the recommendations and conclusions outlined in the approved PEA. Because the PEA is still in the approval process, this would be considered a potentially significant impact, pending approval.~~

In a letter to the District on July 28th, 2020, the DTSC concurred with the conclusion of the PEA Report that no further action is required at the site and thereby approved the PEA Report as final.[3] Therefore, as the final PEA is approved by DTSC with a no further action determination, this impact would be considered *less than significant*.

The text under Section 4.8, Hazards & Hazardous Resources, Significance finding, Impact HAZ-4, and Mitigation Measure HAZ-4 on page 4.8-17 of the Draft EIR is hereby amended as follows:

~~Significance without Mitigation: Potentially significant.~~

~~Impact HAZ-4: The proposed project PEA is subject to the findings and recommendations pending DTSC approval.~~

~~Mitigation Measure HAZ-4: Implementation of Mitigation Measure HAZ-2.~~

~~Significance With Mitigation: Less than Significant.~~

Significance Without Mitigation: Less than Significant

CHAPTER 4.9, HYDROLOGY AND WATER QUALITY

The text under Section 4.9, Hydrology and Water Quality, in the second section under Regional Regulations the title and paragraphs on page 4.9-4 of the Draft EIR is hereby amended as follows:

~~Alameda County Flood Control and Water Conservation District~~

~~The Alameda County Flood Control and Water Conservation District (ACFCD) provides flood protection for the County. The primary focus of the ACFCD is to plan, design, and construct flood control projects, such as natural creeks, channels, levees, pump stations, dams, and reservoirs. Additionally, the ACFCD maintains flood control infrastructure and preserves the natural environment through the enforcement of~~

[3] Department of Toxic Substances Control, 2020, Preliminary Environmental Assessment Report – No Further Action Determination, Dublin Unified School District, New 2nd Comprehensive High School (AKA Promenade Site), Southeast Corner of Central Parkway and Chancery Lane, Dublin, Alameda County (Project Code 204318).

~~pollution control regulations. The ACFCD has delineated the watersheds within Alameda County into different management zones.~~

~~The Zone 7 Water Agency (Zone 7) serves the City of Dublin as well as Livermore, Pleasanton, and adjacent unincorporated areas in eastern Alameda County. Zone 7 is responsible for flood protection within the City of Dublin. Zone 7 maintains 37 miles of flood-protection channels within its service area; the remaining channels are owned by private or public utilities, which are responsible for their maintenance. Stormwater from the Livermore-Amador Valley flows towards Dublin from the north and east and continues south before being diverted towards the San Francisco Bay.[3]~~

Zone 7 Water Agency

The Zone 7 Water Agency (Zone 7) provides regional flood protection for Eastern Alameda County, serving the City of Dublin, as well as the Cities of Livermore, Pleasanton, and Sunol. Zone 7 is one of ten active flood control management zones of the Alameda County Flood Control and Water Conservation District. Zone 7 maintains 37 miles of flood-protection channels within its service area, while also providing environmental enhancements; the remaining channels are owned by private or public utilities, which are responsible for their maintenance. Stormwater from the Livermore-Amador Valley flows towards Dublin from the north and east and continues south before being diverted towards the San Francisco Bay.[3]

The text under Section 4.9, Hydrology and Water Quality, in the second sentence of the first paragraph under Regional Drainage on pages 4.9-7 of the Draft EIR is hereby amended as follows:

~~The project site is located within the Arroyo Mocho Canal Watershed, which is a subwatershed of Alameda Creek Watershed.~~

The project site is located within the Arroyo Mocho subwatershed of the Alameda Creek Watershed.

The text under Section 4.9, Hydrology and Water Quality, in the last sentence of the second paragraph under Regional Drainage on pages 4.9-7 of the Draft EIR is hereby amended as follows:

~~Certain watercourses within the City, primarily natural creeks and larger concrete channels, are maintained by the ACFCD Zone 7, located in Pleasanton.~~

Certain watercourses within the City, primarily natural creeks and larger concrete channels, are maintained by Zone 7, located in Livermore.

The text under Section 4.9, Hydrology and Water Quality, in the first paragraph on pages 4.9-8 of the Draft EIR is hereby amended as follows:

~~Responsibility for flood protection in Dublin lies with Zone 7, which maintains improved flood-control channels and installs new drainage channels. Under Zone 7 permits, development projects have improved any of the existing channels and have created new flood protection facilities. Zone 7 continues to work with local jurisdictions and the development community to identify means and methods to provide greater flood protection in its service area.[10]~~

Responsibility for regional flood protection in Dublin lies primarily with Zone 7, which maintains improved flood-control channels. Prior to the incorporation of the City of Dublin, many development projects within the City limits provided necessary flood control channel improvements. Zone 7 continues to work with local jurisdictions and the development community to identify means and methods to provide greater flood protection in its service area.[10]

The text under Section 4.9, Hydrology and Water Quality, in the first sentence of the first paragraph under Cumulative Impacts on pages 4.9-19 of the Draft EIR is hereby amended as follows:

~~Arroyo Mocho Canal Watershed~~

Arroyo Mocho subwatershed

CHAPTER 4.11, NOISE

The text in Section 4.11, Noise, under the section entitled Stationary Noise, after the first paragraph on page 4.11-12 of the Draft EIR is hereby added to as follows:

A PA system is proposed at the stadium for sporting and other events, as discussed below. In addition, it assumed that a school-wide PA system would be installed for administrative and emergency announcements campus wide. Such announcements and the ringing of class bells would be short in duration and would not result in significant increases in ambient noise levels. Non-amplified student recreational noise would primarily consist of activities at the pool, tennis courts, track and field, and during lunch and recess breaks. While recreational noise from students could periodically increase ambient noise levels in the project vicinity, these non-stadium activities would be limited to daytime hours and would be unamplified, and the resulting noise increase would not be substantial. In addition, Section 5.28.020 of the City of Dublin Municipal Code prohibits “unnecessary” and “unusual” noise and prescribes that the time of day be taken into account. Unamplified student recreational activities such as lunch, recess, and physical education are characteristic of school uses and would not be unusual and would occur during daytime hours. Noise from amplified sporting events at the stadium are discussed below.

The text in Section 4.11, Noise, under section NOI-2, within the section under Significance with Mitigation on page 4.11-19 of the Draft EIR is hereby added to as follows:

~~Significance with Mitigation: Implementation of Mitigation Measure NOISE-4.~~

Significance with Mitigation: Implementation of Mitigation Measure NOI-2.

CHAPTER 4.15, TRANSPORTATION AND TRAFFIC

Two figures have been added to Section 4.15, Transportation and Traffic. Figure 4.15-3: Bicycle and Pedestrian Circulation Plan has been added on page 4.15-16, and Figure 4.15-6 Site Circulation and

REVISIONS TO DRAFT EIR

Designated Parking has been added on page 4.15-26. The new figures are included below. The existing figures within the Draft EIR have been renumbered as follows:

~~Figure 4.15-3: Existing Bus Routes~~

Figure 4.15-4: Existing Bus Routes

~~Figure 4.15-4: Project Site Plan Recommendations~~

Figure 4.15-5: Project Site Plan Recommendations

~~Figure 4.15-5: Estimated Distribution of Future Comprehensive Dublin High School Students~~

Figure 4.15-7: Estimated Distribution of Future Comprehensive Dublin High School Students

After the second sentence of the first paragraph within the section under Pedestrian and Bicycle Facilities on page 4.15-9 of the Draft EIR, the text is hereby amended as follows:

Additionally, Figure 4.15-3 displays pedestrian circulation surrounding the school site.

After the third sentence of the first paragraph within the sub-section under Class II Bike Lanes on page 4.15-11 of the Draft EIR, the text is hereby amended as follows:

Additionally, Figure 4.15-3 displays bicycle circulation surrounding the school site.

The last sentence of the first paragraph within the section under Transit Service on page 4.15-12 of the Draft EIR is hereby amended as follows:

~~The existing bus routes are shown on Figure 4.15-3.~~

The existing bus routes are shown on Figure 4.15-4.

The first sentence of the first paragraph within the section under Public Transit on page 4.15-21 of the Draft EIR is hereby amended as follows:

~~As stated above and shown on Figure 4.15-3, Tri-Valley Wheels provides fixed-route transit service in Alameda County, serving the communities of Dublin, Livermore, Pleasanton, and unincorporated portions of the County.~~

As stated above and shown on Figure 4.15-4, Tri-Valley Wheels provides fixed-route transit service in Alameda County, serving the communities of Dublin, Livermore, Pleasanton, and unincorporated portions of the County.

After the fourth sentence of the first paragraph within the section under Bicycle Facilities on page 4.15-21 of the Draft EIR, the text is hereby amended as follows:

Additionally, Figure 4.15-3 displays bicycle circulation surrounding the school site.

The first sentence after the significance determination on page 4.15-22 of the Draft EIR is hereby amended as follows:

~~Figure 4.15-4 illustrates the location of this, and other recommended on-site transportation mitigation measures discussed herein.~~

Figure 4.15-5 illustrates the location of this, and other recommended on-site transportation mitigation measures discussed herein.

The third sentence within the first paragraph on page 4.15-23 the Draft EIR is hereby amended as follows:

~~The site plan provides 559 parking spaces and roughly 770 feet of off-street loading.~~

The site plan provides 562 parking spaces and roughly 770 feet of off-street loading.

The second sentence of the first paragraph within the section under Analysis, Methods & Results on page 4.15-26 of the Draft EIR, the text is hereby amended as follows:

~~Using the locations of student addresses shown on Figure 4.15-5, student trip lengths to the new proposed high school location and the existing Dublin High School were calculated.~~

Using the locations of student addresses shown on Figure 4.15-7, student trip lengths to the new proposed high school location and the existing Dublin High School were calculated.

After the second sentence of the second paragraph within the section under Pedestrian Facilities on page 4.15-29 of the Draft EIR, the text is hereby amended as follows:

Additionally, Figure 4.15-3 displays pedestrian circulation surrounding the school site.

Under Mitigation TRANS-3.6c on page 4.15-32 of the Draft EIR, the text is hereby amended as follows:

~~Mitigation TRANS-3.6c: An on-site intersection is proposed just south of the Central Parkway and Grafton Street project driveway. The proposed configuration does not align with the driveway and provides for an angled off-set intersection. To provide for safe and efficient on-site circulation, the project shall reconfigure and realign this intersection to align with the project driveway and implement side-street stop-control for vehicles leaving the drop-off area just north of Building A. Under this type of intersection control, vehicles leaving the drop off area will be required to stop.~~

Mitigation TRANS-3.6c: An on-site intersection is proposed just south of the Central Parkway and Grafton Street project driveway. The proposed configuration does not align with the driveway and provides for an angled off-set intersection. To provide for safe and efficient on-site circulation, the project shall reconfigure and realign this intersection to align with the project driveway and implement side-street stop-control for vehicles leaving the drop-off area just north of Building A. Under this type of intersection control, vehicles leaving the drop off area will be required to stop. “Keep Clear” pavement marking should be installed at this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site.

CHAPTER 4.17, UTILITIES AND SERVICE SYSTEMS

The text under Section 4.17, Utilities and Service Systems, after the fourth sentence in the first paragraph under significance criteria UTIL-5 on page 4.17-26 of the Draft EIR is hereby amended as follows:

~~The proposed project would comply with the Alameda County Waste Management Authority's Mandatory Compost and Recycling Ordinance, effective January 1, 2020, within the City of Dublin, which means the school would be required to subscribe to recycling and organics collection services.~~[4]

Diversion of organic waste is mandated currently by Assembly Bill (AB) 1826 and diversion of some amount of recyclables is required by AB 341.[5] Compliance with these bills would ensure that the proposed project adheres to the California Integrated Waste Management Act of 1989, which requires cities and counties throughout the State to divert 50 percent of all solid wastes from landfills through source reduction, recycling, and composting.

The text under Section 4.17, Utilities and Service Systems, after the continued sentence on page 4.17-11 within the Regulatory Framework, State Regulations section of the Draft EIR, text is added as follows:

Short-Lived Climate Pollutants (SLCP): Organic Waste Methane Emissions Reductions

Senate Bill (SB) 1383 was signed into law in 2016, which established methane emissions reduction targets in a statewide effort to enable a reduction in emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. The law outlined actions to reduce short-lived climate pollutants which are deemed essential to address climate changes impact to human health, on the environment, and California's at-risk communities. Pertaining to CalRecycle, SB 1383 establishes a target to reach a 50 percent reduction in the level of statewide disposal of organic waste from the 2017 level by 2020 and a 75 percent reduction by 2025. The SB also grants CalRecycle the regulatory authority to achieve the organic waste disposal targets and established an additional target that no less than 20 percent of currently disposed edible food is recovered for human consumption by 2025. The edible food recovery targets take effect on January 1st, 2022 and the expanded enforcement will require the school to begin edible food waste recovery starting in 2024 with a risk of penalties for noncompliance.[6]

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[4] ~~City of Dublin, 2020, Trash, Recycling, and Organics Service, available online at https://www.dublin.ca.gov/1995/Solid-Waste-and-Recycling, accessed June 11, 2020.~~

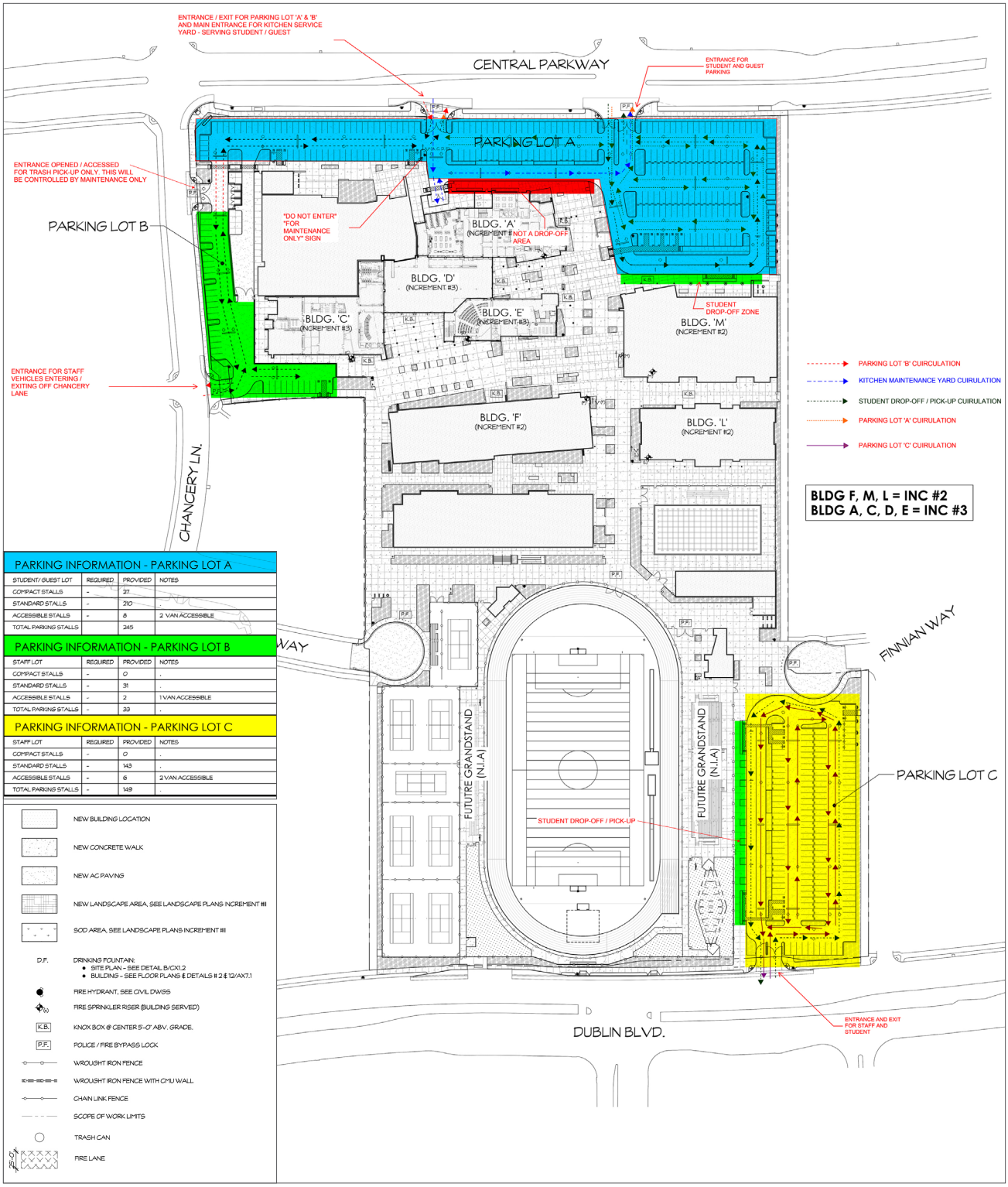
[5] CalRecycle, 2020, Mandatory Commercial Organics Recycling, available online at https://www.calrecycle.ca.gov/recycle/commercial/organics, accessed August 27, 2020.

[6] CalRecycle, 2019, Short-Lived Climate Pollutants (SLCP): Organic Waste Methane Emissions Reductions, available online at https://www.calrecycle.ca.gov/climate/slcp, accessed August 27, 2020.

Source: SIM-PBK, 2020.

Project Site

Figure 4.15-3
Bicycle and Pedestrian Circulation Plan



PARKING INFORMATION - PARKING LOT A

STUDENT/ GUEST LOT	REQUIRED	PROVIDED	NOTES
COMPACT STALLS	-	27.	
STANDARD STALLS	-	210	.
ACCESSIBLE STALLS	-	8	2 VAN ACCESSIBLE
TOTAL PARKING STALLS		245	

PARKING INFORMATION - PARKING LOT B

STAFF LOT	REQUIRED	PROVIDED	NOTES
COMPACT STALLS	-	0	.
STANDARD STALLS	-	31	.
ACCESSIBLE STALLS	-	2	1 VAN ACCESSIBLE
TOTAL PARKING STALLS	-	33	.

PARKING INFORMATION - PARKING LOT C

STAFF LOT	REQUIRED	PROVIDED	NOTES
COMPACT STALLS	-	0	.
STANDARD STALLS	-	143	.
ACCESSIBLE STALLS	-	6	2 VAN ACCESSIBLE
TOTAL PARKING STALLS	-	149	.

Source: SIM-PBK, 2020.

Figure 4.15-6
Site Circulation and Designated Parking

4. List of Commenters

Comments on the Draft EIR were received from the following agencies and service providers, and private individuals and organizations. Written and/or verbal comments on the Draft EIR were also collected during the public comment period at a public hearing held virtually at the District Board of Trustee's ("Trustee's") meeting on July 21, 2020, at 5:30 p.m. Each comment letter and comment has been assigned a title and a number as indicated below. The comments are organized and categorized by:

- GOV = Agencies and Service Providers
- PUB = Private Individuals and Organizations
- COM = Comments Received at the Public Hearing

4.1 AGENCIES AND SERVICE PROVIDERS

GOV1 Harold (Bud) Duke, P.G., Northern California Schools Unit, Site Mitigation and Restoration Program, Department of Toxic Substances Control, July 23, 2020
GOV2 Alex Shapiro, Lawrence Livermore National Laboratory, June 29, 2020
GOV3 Amy Million, Principal Planner, City of Dublin, July 31, 2020
GOV4 Richard Hume, P.E., Chief, Northern California Schools Unit, Site Mitigation and Restoration Program, Department of Toxic Substances Control, July 28, 2020
GOV5 Elke Rank, Associate Water Resources Planner, Zone 7 Water Agency, August 6, 2020
GOV6 Ben Huie and Elizabeth Chau, Transportation, City of Dublin, July 15, 2020

4.2 PRIVATE INDIVIDUALS AND ORGANIZATIONS

PUB1 Jenni Masse, July 23, 2020
PUB2 Kristi Marleau, August 3, 2020
PUB3 Dan Anderson, June 29, 2020

4.3 COMMENTS RECEIVED AT THE PUBLIC MEETING

COM1 Ramya Ramakrishnan, Tuesday, July 21, 2020
COM2 Kristi Marleau, Tuesday, July 21, 2020

LIST OF COMMENTERS

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5. Comments and Responses

This chapter includes a reproduction of, and responses to, each significant environmental issue raised during the public review period. Comments are presented in their original format in Appendix A, Comment Letters, of this Response to Comments document, along with annotations that identify each comment number. Comment letters in this chapter follow the same order as listed in Chapter 4, List of Commenters, of this Response to Comments Document. The comments are organized and categorized by:

- GOV = Agencies and Service Providers
- PUB = Private Individuals and Organizations
- COM = Comments Received at the Public Hearing

Responses to those individual comments are provided in this chapter alongside the text of each corresponding comment. Letters are identified by category and each comment is labeled with the comment reference number in the margin. Where the same comment has been made more than once, a response may direct the reader to another numbered comment and response. Where a response includes revisions to the text of the Draft Environmental Impact Report (EIR), these revisions are explained and shown in Chapter 3, Revisions to the Draft EIR, of this Response to Comments Document.

Responses to individual comments are presented in Table 5-1, below.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
Agencies and Service Providers		
Harold (Bud) Duke, P.G., Department of Toxic Substances Control, July 23, 2020		
GOV1-1	The Northern California Schools Unit of the Department of Toxic Substances Control (DTSC) has received the Notice of Completion (NOC) for the New Comprehensive Dublin High School Project proposed by the Dublin Unified School District (District). The due date to submit comments is August 3, 2020. The need for the proposed project is based on population growth and increased residential and commercial development in the City of Dublin, which has caused the District's school facilities to exceed capacity. The proposed comprehensive high school would be the District's third high school, and second comprehensive high school in the City of Dublin. The proposed school would consist of classrooms, education and administration-related indoor spaces, as well as outdoor physical education, instructional and recreational components. It would include 559 onsite surface parking spaces and internal drop-off and passing lanes designed for onsite traffic flow and reduced queuing at school entrances. Construction of the proposed project would occur on a total of approximately 23.46 acres. The new comprehensive high school is planned to ultimately accommodate approximately 2,545 students and would be built in two phases (Phase I and Phase II). Project phases would include: • Phase I: Would accommodate 1,308 students, and would consist of the construction of a 30,110 square foot administration building and kitchen, a13,811 square foot student union, a 21,004 square foot library, a 31,898 square foot gymnasium, a 17,597 square foot locker room, a 79,673 square foot academy, 18,563 square feet of Visual and Performing Arts Guidance (VAPA)classrooms, a 55,493 square foot all-weather track with drainage, a 96,837square foot synthetic field with drainage, four overhead field lights, eight tennis courts consisting of 60,719 square feet, and a 135 stall parking garage consisting of 65,529 square feet.	The comment provides an introduction to the commenter, the Department of Toxic Substances Control, acknowledges the due date for comment submittals, and comments on the purpose and requirements of the proposed project. Commenter notes that the District and DTSC entered into an Environmental Oversight Agreement for the development of a Preliminary Environmental Assessment (PEA), which the DTSC is currently in the process of reviewing. The commenter provides a summary of the conclusions and findings from the PEA. Commenter notes that DTSC is currently in the process of approving the PEA Report and issuing a No Further Action (NFA) determination. Commenter requests that the draft EIR include DTSC's approval of the PEA Report and NFA once it is issued. Commenter also notes that the DTSC is administering the Revolving Loan Fund (RLF) Program to provide loans to investigate and clean up hazardous materials at redevelopment properties which are available to developers, businesses, schools, and local governments. Commenter provides their contact information and informational website if needed. Additions to Chapter 4.8, Hazards & Hazardous Resources, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision acknowledges the No Further Action determination by DTSC.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	• Phase II: Would accommodate the remaining 1,237 students, and would consist of a second 79,630 square foot academy, a 31,131 square foot theatre, a831 square foot orchestra pit, a 4,800 square feet maintenance building for the pool, a 1,768 square foot maintenance building, 3,439 square feet of concessions/restrooms, a 34,506 square foot aquatic complex, and 12,733square feet comprised of 4,000 seat bleachers. On January 22, 2020, the District and DTSC entered into an Environmental Oversight Agreement (EOA, HSA-FY19/20-055) for the development of a Preliminary Environmental Assessment (PEA) to investigate a potential school site to be located at the intersection of Central Parkway and Chancery Lane in Dublin, California (Site). DTSC is currently in the process of reviewing the draft PEA Report. Site documentation can be found at DTSC's public database: https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60002132. The PEA report presented investigation results and conclusions based on a health risk screening evaluation for the Site conducted by the District in 2018 outside of DTSC's oversight. The PEA investigation included soil sampling for the following chemicals of potential concern (COPCs): • Organochlorine pesticides (OCPs), metals, polyaromatic hydrocarbons (PAHs),semi-volatile organic compounds (SVOCs), PCBs, TPH as diesel, TPH as motor oil and asbestos from suspect fill material; and • OCPs and metals from historical agricultural activities. The PEA report concluded the following: • COPCs were not detected in native soil or imported fill at levels exceeding conservative risk-based screening values for residential land use, except for arsenic; and that • Arsenic concentrations were within background levels. A human health screening evaluation was conducted using an unrestricted residential use scenario and the estimated upper-bound cumulative cancer risk for exposure to COPCs in soil at the Site is 7.5 x 10-7, which is below the cumulative cancer risk management goal of	

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	1 x 10-6 (<10-6). The estimated upper-bound noncancer hazard index (HI) for exposure to COPCS in soil is 1, which is equal to the noncancer HI risk management goal of 1. The PEA report concluded that COPCs were not detected in soil at levels exceeding conservative risk-based screening values for residential land use and recommended no further action for the Site. DTSC tentatively concurred with the conclusions in a meeting with the District on March 16, 2020 and is currently in the process of approving the PEA Report and issuing a No Further Action (NFA) determination. DTSC recommends that the draft EIR be revised to include DTSC's approval of the PEA Report and NFA determination once it is issued. DTSC is also administering the Revolving Loan Fund (RLF) Program which provides revolving loans to investigate and clean up hazardous materials at properties where redevelopment is likely to have a beneficial impact to a community. These loans are available to developers, businesses, schools, and local governments. For additional information on DTSC's Schools process or RLF Program, please visit DTSC's web site at www.dtsc.ca.gov. If you would like to discuss this matter further, please contact me at (916) 255-3695, or via email at Bud.Duke@dtsc.ca.gov.	
GOV2 Alex Shapiro, Lawrence Livermore National Laboratory, June 29, 2020		
GOV2-1	Just a quick question regarding Draft of Impact report received in mail last week. Does the process of comments and approvals indicate the project has not been approved to proceed and Phase I to be completed by Fall of 2022?	The comment expresses an opinion about the proposed project and does not address adequacy of the Draft EIR. As a general response, the certification of the FEIR is scheduled to occur during the public hearing on September 8th, 2020.
GOV3 Amy Million, Principal Planner, City of Dublin, July 31, 2020		
GOV3-1	The City of Dublin appreciates the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) prepared for the New Comprehensive Dublin High School (proposed project). The proposed project would develop a new high school and related educational facilities for approximately 2,545 students on a vacant 23.46-acre site located north of Dublin Boulevard, south of Central	Comment noted. No additional response required.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	Parkway, east of Chancery Way, and adjacent to Finnian Way at both the eastern and western boundaries. The City of Dublin ("City") is concerned about potential impacts in the following topical areas: aesthetics (lighting), energy, hydrology, land use, noise, City parks, utilities & service systems, and traffic.	
GOV3-2	Aesthetics (Lighting) In order to address the impact of excessive light spill (24 foot candles) on the residences adjacent to the southwestern boundary of the project site, Mitigation Measure AES-4c requires the following: "The District shall adhere to a schedule for which lighting assemblies associated with the tennis courts shall be shut off by 9 pm daily. If the District alters the timing schedule for the tennis court lighting, the residents adjacent to the southwestern boundary of the project site shall be consulted." The proposed shut off time of 9 pm daily is a critical component to the effectiveness of the mitigation. Allowing the timing set forth in the mitigation to be altered based on an undefined consultation could result in significant impacts to those residents. It is unclear what would be accomplished by consulting with adjacent residents and it seems unlikely that agreement to a later time by all effected residents would ever be achieved. Mitigation Measure AES-4c should be revised to delete the second sentence and add the following: "Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints." If the District chooses to retain the second sentence of Mitigation Measure AES-4c, additional detail should be provided on the required consultation with the residents, including the purpose of the consultation, steps that would be taken, how potential outcomes would be addressed, and measurable standards that demonstrate how potential adverse impacts to the residents would remain less than significant with mitigation.	Comment noted. Revisions to Chapter 4.1, Aesthetics, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-3	Automotive lighting impacts are described on DEIR page 4.1-21 as "not a new source of light or source of light which is currently uncommon to the area" and stated to be less than significant without mitigation. The proposed parking area located east of the stadium is substantially closer to the residential uses than any existing automotive light source (i.e., Dublin Boulevard or Central Parkway). Contrary to the determination in the DEIR, the proposed parking area would provide a new light source from vehicles associated with nighttime events for the adjacent residents. This impact should be considered less than significant with mitigation and a mitigation measure similar to measures proposed for the western boundary of the project site requiring fencing and/or landscaping should be included.	Comment noted. Revisions to Chapter 4.1, Aesthetics, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV3-4	Energy Section 4.5.12 Existing Conditions, Energy Provider (Pg. 4.5-7) should be revised to reflect that EBCE base power portfolio is "Bright" Choice (not Brilliant Choice). Brilliant 100 is no longer an option, as of July 1, 2020.	Comment noted. Revisions to Chapter 4.5, Energy, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV3-5	Hydrology & Water Quality The DEIR incorrectly states that School Districts are not considered to be "C-3 regulated projects". School Districts are considered Municipal Regional Stormwater Permit (MRP) Provision C.3 Regulated Projects if they are connecting into the municipal separate storm sewer regulated by the MRP. The City of Dublin is a co-permittee under the MRP, and consequently, the school district must comply with MRP requirements, as applicable. Separately, the project is located within the area covered by California Regional Water Quality Control Board San Francisco Bay Region Order No. R2-2003-0031, Waste Discharge Requirements and Water Quality Certification for Dublin Ranch Project, Dublin and Livermore, Alameda County and is required to adhere to the Revised Stormwater Management Plan for Dublin Ranch, City of Dublin, CA developed by Balance Hydrologics, Inc., dated March 2003. There is no mention of this specific Order in the DEIR.	Recent correspondence with the SWRCB indicates that school districts are not covered under Phase I or Phase II MS4 permits, and that the District is not bound by the MS4 permit (R2-2015-0049) that covers the City of Dublin. California Regional Water Quality Control Board San Francisco Bay Region Order No. R2-2003-0031 was issued in 2003 and imposes requirements on Chang Su-O Lin, Hong Lien Lin, and Hong Yao Lin related to development of the Dublin Ranch Project. Specifically, Order No. R2-2003-0031 and the Revised Stormwater Management Plan referenced by the City required the construction of a regional water quality pond to capture and treat stormwater runoff from the 708 acre site, and the implementation of site design measures, source control measures, and treatment controls for many areas of the Dublin Ranch Project. The regional water quality pond has been installed, and the proposed school project complies with other requirements outlined in the SWMP. Regardless of whether the District is bound by the requirements of the MRP and/or Dublin Ranch Order No. R2-2003-0031, the proposed project will be in general compliance with the MRP and the Dublin Ranch Order. The City's comment does not raise any significant environmental impacts or issues, and therefore, the proposed project's hydrology and storm drainage plans will not pose a significant impact.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-6	The following additional comments on Hydrology & Water Quality are provided by page reference: • Pg. 4.9-14 o The combo flow-volume sizing does not meet hydromodification management (HM) requirements; it is only applicable to LID treatment sizing (third paragraph). o Bioretention areas can be unlined (preferred) as long as depth to seasonal high groundwater is >/= 5 feet (fourth paragraph).	The current BAHM software was utilized to meet HM requirements using bio-retention basin for post development calculations. The combo flow-volume basins are used due to site space constraints and seasonal depth to groundwater at 8 feet. The basins will need to be lined in order to meet C.3 water quality requirements given the depth to seasonal groundwater. The final Hydrology and Low Impact Development Report and Stormwater Pollution Prevention Plan will address these questions.
GOV3-7	Pg. 4.9-17, Proposed Drainage: The DEIR does not properly mitigate for HM flows. HM Requirements require flows from 10% of the 2-year storm event to the 10-year storm event be mitigated (1st paragraph). The flows must be metered/discharged at 10% of the 2-year storm event.	The current hydrology report does mitigate HM flows based on BAHM software analysis. Metering of discharge will be achieved by using an orifice and will be detailed on final plans and reports. The final Hydrology and Low Impact Development Report will address these questions.
GOV3-8	Land Use Planning The project site is located within the Planned Development Zoning District Ordinance No. 06-00, which originally included Dublin Ranch Areas F, G and H and now consists only of Area G as shown in Figure 1 below. Dublin Ranch was approved as a large, mixed land use development that contains a series of neighborhoods where housing, jobs, shopping, entertainment, and recreational, educational and cultural activities are clustered and inter-connected to provide a full range of urban experiences. The existing development within Area G includes four neighborhoods and two City parks which, prior to the proposed project, were planned to be interconnected through the proposed project site by future streets. On page 4.10-7 of the DEIR, impacts associated with physically dividing an established community are considered less than significant. While typical projects with a potential to divide an established community may include major highways or roadways, storm channels, utility transmission lines or closure of bridges or roadways as stated in the DEIR, the placement of an enclosed development, such as the proposed project creates in the same division. The proposed project divides an established neighborhood by eliminating Finnian Way as a through street and, in particular, would alter public access to Devany Square for residents who live east	Comment noted. No development has ever taken place at the project site that would connect the two neighborhoods to the east and west of the site. The site was previously subject to private ownership and provided for no connectivity between these two neighborhoods. Furthermore, the referenced roadway connection on Finnian Way is a future connection between two separate neighborhoods, not a current feature of the site. Therefore, the school site would not divide an established neighborhood. Additionally, there are other connecting paths and roadways to get from one side of the school to the other. While Finnian Way will not be developed through the site, access to the site will remain from Dublin Boulevard to the south of the site, and from Central Parkway to the north of the site, during non-school hours. There are no current plans to entirely enclose the proposed school site with a perimeter fence with gates. Further, the proposed project will not impact the accessibility of either Devany Square or Bray Commons. The project is, therefore, neither separating a roadway nor dividing an established neighborhood.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	of the project site and would alter public access to Bray Commons for residents who live west of the project site. It is not clear if the proposed project would allow pedestrian circulation from the east and west terminus of Finnian Way. If pedestrian circulation is prohibited through gates or other means, mitigation measures for impacts to the neighborhood should be provided to ensure circulation through the site to connect the neighborhoods and access to the City parks.	
GOV3-8 (cont.)	Figure 1. Neighborhood Context	
GOV3-9	Noise Noise impacts associated with increased traffic, mechanical equipment such as heating, ventilation and HVAC systems, the stadium PA system and crowd noise during special events were included in the DEIR. However, operational impacts that would permanently increase ambient noise levels in the surrounding area from the school PA equipment (non-stadium PA system), class bell system, and general noise from student activities were not evaluated. The DEIR should disclose the impacts associated with these other operational characteristics not identified and propose mitigation, where feasible. Mitigation should consider limiting the hours of noise generating activities, completing an evaluation of the non-stadium PA system and class bell system to minimize spill-over sound levels into	As the commenter notes, noise impacts associated with increased traffic, mechanical equipment such as heating, ventilation and HVAC systems, the stadium PA system and crowd noise during special events were included in the DEIR. An analysis of operational noise from administrative PA announcements, class bell systems, and non-stadium student recreational noise has been added to the FEIR on page 4.11-12, as reflected in Chapter 3, Revisions to the Draft EIR. This analysis shows that there will be no significant impacts associated with operational and non-stadium student recreational noise, and thus, no mitigation measures would be required.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	the adjacent community areas (similar to mitigation measure NOI-1.2 identified to address impacts associated with the stadium PA system), and other methods to reduce noise impacts to surrounding residential uses.	
GOV3-10	Parks & Recreation The proposed project would have a significant physical impact on existing parks and recreational facilities if it would increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated. The DEIR fails to evaluate the potential increase in use of the existing City park, Devany Square. Given the close proximity of Devany Square to the proposed project, the DEIR should evaluate the potential increase in use of that park such that physical deterioration of the park would occur or be accelerated. Mitigation should include limitations on the use of the park by students, increase trash pick-up, possible improvements or changes to the park to address future use by students, and other methods to ensure the impacts to the park are reduced.	Comment noted. The existing Dublin High School is directly adjacent to Kolb Park, located at the northwest boundary of the school. Based on current comparable uses of Kolb Park by students at Dublin High School, it would be speculative to state that impacts would be potentially significant to Devany Square. There has not been a history of reported problems with student use of the Kolb Park, increase in refuse or physical deterioration of Kolb Park, nor has the City informed the District of such issues. Therefore, any impacts to Devany Square would, similar to that at the existing high school, would be anticipated to be less than significant. Nevertheless, District staff will monitor Devany Square during school hours. Additionally, District staff will visually inspect the park after and before school hours and coordinate with the City if trash pickup or other maintenance activities are necessary.
GOV3-11	Utilities & Service As indicated in the City's comments on Notice of Preparation dated October 30, 2019, among other City facilities, there is an existing 60-inch diameter public storm drain pipe within a 15-foot wide easement running north-south through the subject site. The proposed project shows permanent improvements, such as the sports field, over a portion of this pipeline and within the easement. This section does not identify this existing facility or easement.	Comment noted. The existing 60-inch storm drain and easement are designed to remain.
GOV3-12	The Project Description in Section 3.5.5 Storm Drainage (Pg. 3-28) states, "All existing on-site storm drainage inlets/manholes and laterals will be removed," yet the preceding sentences indicate that many of the storm drain pipes will remain in place. The City requires inlets at all low points and manholes for access at all junctions or a maximum of every 400 feet along the pipeline.	Comment noted. All existing City storm drain mainlines will remain including easements. There are existing laterals and inlets that will be removed as they will not serve a use for the proposed project. Existing mainline manholes will remain with rims adjusted to new grades. Inlets will be removed, and access to existing manholes will remain. Although, inlets and manholes may not be within 400 feet, they will be sufficiently spaced to provide access and will not deviate considerably from existing conditions. Therefore, no significant impact is anticipated related to the City's comment.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-13	In addition, Section 3.5.7 is unclear if the public easements for storm drain will remain and continue to be owned and maintained by the City.	Comment noted. DUSD's understanding is that the on-site storm drain mainlines and easements will continue to be owned and maintained by the City. City's comment does not raise a significant environmental issue and does not have an impact on the CEQA findings.
GOV3-14	The City and the District are parties to a stipulation arising out of the District's eminent domain action that, among other things: (a) acknowledges that the Project will likely require the relocation of some of the stormdrain easements and improvements, (b) provides that the Project shall not cause an unreasonable disruption to the stormdrain services, (c) provides that the District and the City will cooperate the identify which easements will be relocated so that the Project will not unreasonably interfere with or impair the continued use of the easements (with the District being responsible for such costs), and (d) finally provides that the court retains jurisdiction to fix the terms and conditions regarding the easements, if the parties are unable to agree.	Comment noted.
GOV3-15	Utility & Service Systems (Pg. 4.17-26) states the following: "The proposed project would comply with the Alameda County Waste Management Authority's Mandatory Compost and Recycling Ordinance, effective January 1, 2020, within the City of Dublin, which means the school would be required to subscribe to recycling and organics collection services." The Mandatory Recycling Ordinance does not apply to State and Federal entities, including public schools. Diversion of organic waste is mandated currently by AB 1826 and diversion of some amount of recyclable is required by Assembly Bill (AB) 341.	Comment noted. The District shall subscribe to recycling and organics collection services pursuant to Assembly Bill 1826 and Assembly Bill 341. Revisions to Chapter 4.17, Utilities & Service Systems, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV3-16	Section 4.17.3.1 Regulatory Framework, State Regulations should include a discussion of Senate Bill (SB) 1383 organics and recycling diversion requirements, which go into effect in 2022. Additionally, SB 1383 will require the school to begin edible food waste recovery starting in 2024.	Comment noted. The District shall comply with the organics and recycling diversion requirements which go into effect in 2022, as well as edible food waste recovery which go into effect in 2024, pursuant to Senate Bill 1383. Revisions to Chapter 4.17, Utilities & Service Systems, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-17	Transportation & Traffic The DEIR, on pg. 4.15-1, states that the adopted Senate Bill 743 (SB 743) has resulted in a switch from automobile delay and level of service (LOS) to vehicle miles traveled (VMT) for determination of significant transportation impacts. Although this is correct and VMT should be used for determination of impacts, LOS, delay, and queuing should still be reviewed at certain intersections adjacent to the proposed project. We previously commented on the Notice of Preparation (NOP) for the proposed project, suggesting that 16 intersections and the freeway be evaluated. The City is seeking clarification if any LOS or queuing analysis completed as part of the transportation and traffic review, even if not explicitly shown in the DEIR, but potentially in a Transportation Impact Analysis (TIA). If a TIA was prepared, please provide to the City for review of potential safety impacts from queueing on pedestrian and bicycle circulation, as well as on traffic operations. A TIA can assist in anticipating the impacts and indicate necessary changes and improvements, such as traffic signal coordination, signal timing upgrades, lane configuration changes at the intersection etc. It can also assist with estimating potential spillover onto neighboring streets. More information is needed regarding traffic volumes and queuing information to determine if the lane configuration proposed at the intersections or if the turn lane storage lengths are sufficient, if the queues will be impact or block any crosswalks or driveways on Grafton Street, Central Parkway, Dublin Boulevard, etc.). It is anticipated that traffic signal coordination along Central Parkway will be necessary and the information on volumes from a TIA can assist in determining what modifications are needed. It’s unclear if there is information provided to guide the pick-up/drop-off hours or if they will be staggered.	Comment noted. While Senate Bill 743 expressly provides that automobile delay, as described solely by Levels of Service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment (Pub. Res. Code, § 21099), an intersection LOS analysis dated June 25, 2020, was conducted. That analysis included the intersections provided in the City's NOP letter of 10/30/19 and was conducted based on the City's standard methodologies and guidelines. The Transportation – Level of Service Analysis has been included as Appendix B to this FEIR. The findings of the Traffic Impact Analysis do not raise any new significant environmental impacts or issues, or change any of the findings contained in the Draft EIR and Final EIR.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-18	The traffic signals as the intersection of Central Parkway/Grafton Street, Central Parkway/Chancery Lane, and Central Parkway/Brannigan Street shall be connected to the Traffic Operations Center (TOC) by installation of a fiber optic network from the intersection of Tassajara Road/Central Parkway to these intersections. Currently, the traffic signals at Central Parkway/Lockhart Street and Tassajara Road/Central Parkway are already connected to the central system. Connection to the TOC will allow for traffic signal coordination and traffic monitoring, improving traffic flow and safety for pedestrians and bicyclists.	The District acknowledges the comment from the City, however this is outside of the scope of the project and is not included within the scope of the EIR. The City's comment does not raise a significant environmental issue or impact, and, therefore does not impact the District's finding.
GOV3-19	The DEIR does not thoroughly describe the on-site circulation and parking for the proposed project. This may be due to the lack of information provided, however an evaluation of on-site queuing, particularly during the drop-off and pick-up times, may impact the safety of motorists, pedestrians, and bicyclists. It appears that vehicle queues may extend from the drop-off/pick-up area near Building A and onto Central Parkway. This could result in safety issues on Central Parkway near the school access points. Provide an on-site vehicle circulation analysis, and a pedestrian and bicycle circulation analysis. Include on-site queuing and a driveway queuing analysis.	The project proposes a total of 770 lineal feet of off-street loading and unloading space, which meet the City's Code requirements of 750 lineal feet. The anticipated service processing rate (vehicles per minute) of this amount of loading/unloading space is in excess of the anticipated arrival rate (vehicles per minute). Thus, excessive queuing onto neighborhood streets is not expected if the internal circulation recommendations and mitigations of the DEIR are incorporated. As schools have high peaking characteristics during the periods immediately preceding and immediately following the school day, congestion should be expected during those times. However, the loading and unloading zones are properly sized to meet the anticipated demand. The Draft EIR and Final EIR describe, analyze, and provide a discussion of on-site circulation and pedestrian and bicycle circulation. DEIR Figure 4.15-4 (now Figure 4.15-5 in the FEIR) illustrates all on-site roadways with arrows denoting the directionality of proposed vehicular travel on site. Additionally, two new figures, Figure 4.15-6: Site Plan Traffic Circulation depicts the vehicle path of travel on the site plan and Figure 4.15-3: Bicycle and Pedestrian Circulation Plan illustrates the available pathways for bicycle and pedestrian movement.
GOV3-20	The following additional comments on Transportation & Traffic are provided by page reference: • Pg. 4.15-20: o Table 4.15-1: The in and out trips do not add up to the total trips.	Comment noted. The trip generation results are rounded to the nearest integer, which leads to the total trips being one less than the sum of the ins and outs in the AM peak hour. This is not material to the overall analysis.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-21	o Table 4.15-2: The vehicle occupancy and vehicle trip assumptions in this table were applied across all events equally. However, some of these events would likely have different vehicle occupancies and trips. For example, a football practice may have fewer trips if the student drives themself or is already at school and is picked up by a parent.	Comment noted. The analysis is based on the best available information relative to modal split and vehicle occupancy for these types of special events. As the comment states, actual events may have slightly different travel patterns. These small variations would not alter any of the conclusions of the DEIR.
GOV3-22	Pg. 4.15-22: o Mitigation Measure TRANS-1.3 should include language to ensure that adequate bicycle paths are provided to these bicycle parking locations. It is recommended that the school provide a pedestrian and bicycle circulation plan to show anticipated flows for each mode. This includes the circulation on adjacent roadways to get to the school.	Comment noted. Safe and adequate paths of travel for bicycles should be provided between the local street network and the locations of bicycle parking. A network of pathways was conceptualized during the design phase of the project by the project architect and incorporated into the final design packet. The network would provide pathways with designated entries and through flow along Dublin Boulevard to the south, Central Parkway and Grafton Street to the north, from the Finnian Way loops to the west and east, and from Chancery Lane to the east. These entryway networks would connect to the larger service area of the nearby school proximity, namely; Fallon Boulevard, Lockhard Street, and Keegan Street to the east and Branigan Street and Tassajara Road to the west. Figure 4.15-3: Bicycle and Pedestrian Circulation Plan has been added within this FEIR to resolve this comment.
GOV3-23	• Pg. 4.15-23: While the lack of sufficient parking is not considered to be a significant impact under CEQA, the DEIR clearly states that insufficient parking will likely impact the neighborhood. The City is requesting the school provide a parking enforcement to minimize the amount of overflow parking within the surrounding neighborhood. Many other high schools manage parking and having parking permits and policies which designate where staff/students are allowed to park and procedures to handle complaints from neighbors. In addition, please show where students and staff will park on-site. Will there be a separate entrance for staff or a way for staff to avoid student vehicle queues?	Comment noted. While the provision (or lack) of sufficient parking is not considered to be an environmental impact under CEQA, the DEIR provides a summary of the project's proposed parking supply in comparison to the City's Code requirements and expected parking demand. These calculations find that the anticipated need for parking at the site will exceed the available supply. Thus, overflow parking onto the surrounding neighborhood streets is expected. This parking would likely occur within the nearest available and permitted on-street parking. Nevertheless, the District has made an effort to accommodate as much student parking on site as possible. District staff contact information will be available to residents that would like to raise any concerns related to parking conflicts with nearby residences. Staff and student parking on-site as well as separate circulation entrances and exits are depicted in Figure 4.15-6, included in Chapter 3, Revisions to the Draft EIR.
GOV3-24	• Pg. 4.15-24: The City does not agree that the overall effect of the project on the regional MTS roadway network would be a decrease in traffic levels if you evaluate each MTS roadway individually. While in the overall there may be a decrease in traffic levels due to shorter trip lengths, there may be added trips on certain roadways due to the proposed project. For example, if a student lived west of Tassajara Road and currently goes to Dublin High School, they would travel	The overall goal of the ACTC's CMP monitoring system on the regional MTS roadway network is to encourage, supplement, and support transportation demand management (TDM) efforts to assess, monitor, and improve the performance of the county's multimodal transportation system, address congestion, and ultimately protect the environment with strategies to help reduce greenhouse gas emissions. The net impact of project on the regional roadway network will be positive as it will provide a school closer to student's homes, thereby increasing walk and bike trips

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	westward on Dublin Boulevard or I-580 or another east/west arterial, however, with the proposed project, they may attend the new comprehensive high school and would travel eastward and travel eastbound on Dublin Boulevard or Central Parkway, to the east of Tassajara Road, which will result in an increase in vehicles.	and decreasing the total number of Vehicle Miles Travelled. As the comment indicates, there may be isolated locations (i.e. Dublin Boulevard at the project's driveway) wherein the project increases the net number of vehicle trips, but the overall effect of the project on the regional network will be a decrease in the amount of vehicular travel. While automobile delay and levels of service are generally not considered significant impacts under CEQA, calculations of these metrics on local roadways have been performed and provided.
GOV3-25	• Pg. 4.15-25: o Figure 4.15-4 (Note 1.7-1): Did the school district consider moving the drop-off area from near Building A to west of Building C (near Chancery Lane)? Or as an alternative, the drop-off area could be moved to north of Building C and vehicles would be required to enter from the southwestern driveway on Chancery Lane. This would provide a significantly longer on-site storage to reduce the possibility of queues extending off-site onto Central Parkway or Chancery Lane.	Multiple options for site layout were reviewed to optimize the placement of buildings, sports fields, transportation infrastructure and other site requirements. The project proposes two pick-up and drop-off areas; one accessed via Central Parkway and one via Dublin Boulevard. Two loading and unloading zones will serve to split the demands for this activity among locations, thereby providing students with options and reducing the likelihood of queue spillback onto neighborhood streets. As the project's frontage on Chancery Lane is relatively short, it was not identified as a location for pick up and drop off when considered with all of the other on-site amenity placement decisions.
GOV3-26	o Figure 4.15-4 (Driveway access on Dublin Boulevard): Since the driveway on Dublin Boulevard is a right-in/right-out only driveway, did the school district consider the impacts to adjacent intersections due to these access limitations? We anticipate many vehicles making an eastbound U-turn at Carnmore Place (The Terraces at Dublin Ranch) traffic signal on Dublin Boulevard. A level of service and queuing analysis should be completed as part of the operational analysis. This proposed driveway location could cause potential safety issues with unsafe movements as vehicles exiting the parking lot may weave across several travel lanes to reach the westbound left-turn lane at the intersection of Grafton Street to make a U-turn. Did the school district consider aligning the parking lot driveway access point with the intersection of Dublin Boulevard and Grafton Street to prevent U-turns and vehicles crossing multiple lanes?	The provision of on-site sports fields precludes this driveway from aligning directly with Grafton Street. In its proposed location, off-set from Grafton Street, only right turns in and out will be permitted. These restrictions will require up and downstream u-turns to be made, as referenced by the comment. These turn restrictions and associated u-turns have been factored into the environmental assessment and non-CEQA related level of service assessment. Additionally, please refer to GOV3-19 for a response to this comment.
GOV3-27	o Figure 4.15-4 (Pedestrian flow on Dublin Boulevard): Based on observation and experience from other schools in Dublin, pedestrians are likely to cross at unmarked crosswalks ("jaywalk") near school entrances. Did the school district	Comment noted. Students should use designated crosswalks. Unlike the streets fronting many neighborhood schools in the District, Dublin Boulevard is a major arterial thoroughfare with multiple lanes of traffic in both directions. Students would be expected to use the crosswalks and traffic lights, as crossing Dublin Boulevard at

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	consider installing measures to prevent pedestrians from crossing Dublin Boulevard mid-block between Brannigan Street and Grafton Street and between Grafton Street and Keegan Street? It is recommended that pedestrians cross Dublin Boulevard at the marked crosswalks at the intersections of Dublin Boulevard/Brannigan Street, Dublin Boulevard/Grafton Street, and Dublin Boulevard/Keegan Street.	most times, including around school pickup and drop off, is impractical. For this reason, the District does not anticipate any significant impacts associated with students crossing Dublin Boulevard mid-block, and has not proposed any mitigation measures. Should any unanticipated impacts arise in the future, the District will take appropriate steps to discourage students from crossing Dublin Boulevard mid-block between Brannigan Street and Grafton Street and between Grafton Street and Keegan Street.
GOV3-28	• Pg. 4.15-26, Table 4.15-3: Provide clarification on where the employee trip lengths come from and whether they are from the City's travel demand forecast model.	Employee trip lengths were taken from the City of Dublin's travel demand model.
GOV3-29	• Pg. 4.15-30: o Mitigation Measure TRANS-3.3: As indicated in a previous comment, the driveway location on Dublin Boulevard is not ideal. Entering vehicles would likely be coming from the west and would need to make an eastbound U-turn at Dublin Blvd/Carnmore Place (The Terraces at Dublin Ranch). The additional vehicles for this movement may result in queues that exceed the left turn pocket storage. A level of service and queuing analysis should be completed as part of the operational analysis.	Please refer to GOV3-17 and GOV3-26 for a response to this comment.
GOV3-30	o It would be very helpful if a figure is provided to show traffic flow throughout the site, particularly how the two northern drop-off/pick-up areas would interact with each other and the parking areas in the northeast portion of the site. It is recommended that the traffic flow for the two drop-off/pick-up areas be kept separate. Another suggestion to reduce the amount of vehicle conflict and the internal intersection between the Building A and Building M drop-off locations would be to relocate the Building A drop-off to Zone A. Vehicles could enter from the southwest driveway on Chancery Lane and then exit the unsignalized driveway on Central Parkway. This would separate the vehicle circulation for the two drop-off areas.	Comment noted. DEIR Figure 4.15-4 (now Figure 4.15-5 in the FEIR) illustrates all on-site roadways with arrows denoting the directionality of proposed vehicular travel. A new figure, Figure 4.15-6: Site Plan Traffic Circulation depicts the vehicle path of travel on the site plan. A level of service and queuing analysis are included as Appendix B to this FEIR. Only one student drop-off is provided for parking lots 'A' & 'B', located North of Building 'M' as indicated on the new Figure 4.15-6: Site Plan Traffic Circulation within this FEIR. The area in question just North of building 'A' is designated as a maintenance access road for servicing the kitchen service yard. Currently, parents can enter in the Central Parkway signaled entrance, drop their child off at the drop-zone and travel in a continuous loop and exit back onto Central Parkway (West to East) without the need for vehicles coming from the West parking lots to create circulation issues. See new Figure 4.15-6: Site Plan Traffic Circulation within this FEIR for vehicle path of travel.

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Comment #	Comment	Response
GOV3-31	• Pg. 4.15-31: o Impact TRANS-3-4: Additional information is required in order to confirm there no impacts due to potential queues spilling onto Central Parkway. For example, Building A queue could easily spill onto Central Parkway due to the short throat length at the driveway and the potential for exiting vehicles to conflict with traffic entering the Building M drop-off area. Please provide an on-site queuing analysis, particularly during drop-off and pick-up times.	The project proposes a total of 770 lineal feet of off-street loading and unloading space, which meets the City's Code requirements of 750 lineal feet. The anticipated service processing rate (vehicles per minute) of this amount of loading/unloading space is in excess of the anticipated arrival rate (vehicles per minute). Thus, excessive queuing onto neighborhood streets is not expected if the internal circulation recommendations and mitigations of the DEIR are incorporated. As schools have high peaking characteristics during the periods immediately preceding and immediately following the school day, congestion should be expected during those times. However, the loading and unloading zones are properly sized to meet the anticipated demand.
GOV3-32	o Mitigation Measure TRANS-3-4: The impact of the mitigation measure is unclear. Is the school district suggesting that loading and unloading activities remain on Central Parkway? Even with the proposed mitigation to leave the bulb-out at its existing location, there is still a potential for vehicles to use this area as a loading/unloading area. This could lead to vehicles blocking the intersection of Central Parkway /Chancery Lane. Vehicles would also likely block the bike lane on the south side of Central Parkway. The Livermore Amador Valley Transit Authority (LAVTA) provided the City with comments, dated December 11, 2019, requesting that the school district show how public transit buses, vehicles, pedestrians, and bicycles will all interact in a safe manner on-site and off-site adjacent to the proposed school.	Loading and unloading zones for vehicles on Central Parkway are not recommended or proposed. Mitigation Measure TRANS-3.4 recommends keeping the bulb-out at its existing location at the eastern terminus of the bus stop and striping a right turn pocket into the project's driveway. Mitigation Measure TRANS-3.4 would result in a less than significant impact to the drop off and pick up zone caused by loading and unloading activities in this area. Figure 4.15-3: Existing Bus Routes of the DEIR, now renumbered Figure 4.15-4 within the FEIR depicts how public transit buses will circulate on-site and off-site adjacent to the proposed school. A new figure, Figure 4.15-3: Bicycle and Pedestrian Circulation Plan, included in Chapter 3, Revisions to the Draft EIR, depicts pedestrian and bicycle circulation surrounding the school site. An additional new figure, Figure 4.15-6 Site Circulation and Designated Parking, included in Chapter 3, Revisions to the Draft EIR, depicts vehicular circulation and parking on-site.
GOV3-33	• 4.15-32: o Mitigation Measure TRANS-3-6c: Measures such as a “Keep Clear” pavement marking should be installed at this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site.	Comment noted. A “Keep Clear” pavement marking will be incorporated into the site's internal circulation plan. The addition of the type of pavement marking recommended by the comment would clarify right-of-way and allow for a more orderly movement of vehicles through the site. Revisions to Chapter 4.15, Transportation and Traffic, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV3-34	o Mitigation Measure TRANS-3-6d: To limit queuing onto Dublin Boulevard, it is recommended that vehicles go to the easternmost drive aisle first and to also remove the parking spaces on the southern edge of the parking lot to limit the number of occurrences that a vehicle is entering or leaving a parking space near this driveway, which may result in vehicles queuing into Dublin Boulevard while waiting for this maneuver to be completed. In addition, please show the location of loading/unloading zones and vehicle circulation paths for this parking lot.	Mitigation measure TRANS-3.6d aligns with this comment. The proposed mitigation would reconfigure this area to function in a counterclockwise loop. Entering vehicles would be directed to the easternmost drive aisle first as part of this loop movement to execute a drop-off or pick-up maneuver. The District has reviewed several layouts and the current is the best possible option for circulation and parking on-site. In an effort to retain as many parking spaces as possible on-site to prevent parking spillover into residential communities, the parking spaces mentioned by the commenter will remain. Additionally, Figure 4.15-6: Site Plan Traffic Circulation, included in Chapter 3, Revisions to the Draft EIR depicts the vehicle path of travel on the site plan.
GOV3-35	Thank you for your consideration of our comments. The City looks forward to our continued cooperative and proactive effort in addressing the impacts of the proposed project. Should you have any questions or need additional information, please feel free to contact me at (925) 833-6610 or by e-mail at amy.million@dublin.ca.gov.	Comment noted.
GOV4 Richard Hume, P.E., Chief, Department of Toxic Substances Control, June 29, 2020		
GOV4-1	On June 26, 2020, Terraphase Engineering Inc. (Terraphase), on behalf of the Dublin Unified School District, notified the Department of Toxic Substances Control (DTSC) that it had complied with all public review and comment requirements for the Preliminary Environmental Assessment Report (PEA Report - Terraphase, May 6, 2020), pursuant to Education Code section 17213.1 (a)(6)(A). The District made the PEA Report available for public review and comment from May 18, 2020 through June 17, 2020, and a public hearing was held on May 27, 2020. No written comments were received during the comment period. Additionally, DTSC reviewed the PEA Report received electronically on May 7, 2020. The PEA Report presents investigation results and conclusions based on a screening level human health risk assessment for the proposed New 2nd Comprehensive High School (formerly Promenade Site) to be located southeast of the intersection of Central Parkway and Chancery Lane in Dublin, Alameda County, California (Site). The proposed high school will contain 94 classrooms and accommodate a maximum of 2,585 students. Water and sewer services will be provided by the local municipality.	The commenter notes that the PEA Report was made available for public review, that a public hearing was held, and no comments were received. The commenter states that the DTSC reviewed the PEA Report which presents results and conclusions from the report. The commenter summarizes the historic use of the site, as provided in the PEA as well as a summary of the conclusions of the report. The commenter states that, based on the PEA's findings, neither a release or presence of hazardous material or naturally occurring hazardous substance which would pose a threat to public health or the environment under unrestricted land use was indicated at the Site. Commenter states that DTSC concurs with the conclusion of the PEA Report that no further action is required and approves the PEA Report as final. Additionally, the commenter notes that pursuant to Education Code section 17213.2, subdivision (e), any hazardous material discovered anytime during construction at the Site, the District shall cease all construction activities and notify DTSC. The commenter closes with their contact information.

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Comment #	Comment	Response
	The approximately 23-acre Site is identified by the Alameda County Assessor's Office as Assessor's Parcels Numbers 985-78-2 (0.4 acres), 985-78-3 (0.9 acres), 985-78-4 (9.60 acres), 985-78-5 (4.53 acres), 985-78-6 (3.88 acres), and 985-78-7 (3.71 acres). The Site is bounded to the north by Central Parkway followed by a residential development; to the east by a residential development; to the south by Dublin Boulevard followed by retail shops; and, to the west by Devany Square and a residential development, then Brannigan Street. According to the PEA Report, the Site was used for agricultural purposes from at least 1939 until the mid-1990s. From approximately 2005 to 2009, the Site appears to been used for equipment and materials staging as well as for temporary trailers and offices related to the surrounding residential construction that occurred from 2005 to 2009. Utilities (water, sewer, and storm water lines) were installed and preliminary grading was conducted as part of planned residential development at the Site, but the proposed development ceased in 2009 and the Site has remained vacant since. Approximately 600 cubic yards of soil was imported and placed on the Site in February 2020. This soil was excavated as part of construction activities at the nearby Dublin High School located at 8151 Village Parkway, Dublin, California. PEA sampling included activities to investigate the Site for potential impacts from the following chemicals of potential concern (COPCs) that may pose a threat to human health or the environment: • Organochlorine pesticides (OCPs), arsenic, and lead in soils from potential agricultural chemical use; and, • OCPs, metals, total petroleum hydrocarbons (TPH), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and asbestos in soils from fill material. Arsenic concentrations were within established background concentrations for the area. All other COPCs were detected below their respective screening levels for unrestricted land use. The estimated cumulative cancer risk for the Site was calculated to be 7.5	

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	x 1 o-7 which is below the risk management goal of 1 x 1 o-6. The estimated cumulative non-cancer risk was calculated to be 1 which is equal to the non-cancer hazard index (HI) risk management goal of 1. The PEA Report recommends a ""No Further Action"" determination for the Site. Based on review of the PEA Report, neither a release of hazardous material nor the presence of a naturally occurring hazardous substance which would pose a threat to public health or the environment under unrestricted land use was indicated at the Site. Therefore, DTSC concurs with the conclusion of the PEA Report that no further action is required at the Site and hereby approves the PEA Report as final. Pursuant to Education Code section 17213.2, subdivision (e), if a previously unidentified release or threatened release of a hazardous material or the presence of a naturally occurring hazardous substance is discovered anytime during construction at the Site, the District shall cease all construction activities at the Site and notify DTSC. Additional assessment, investigation or cleanup may be required. If you have any questions regarding the project, please contact Ms. Elizabeth Tisdale, DTSC Project Manager at (916) 255-6666 or via e-mail at Elizabeth. Tisdale@.dtsc.ca.gov.	
GOV5 Elke Rank, Alameda County Flood Control and Water Conservation District, Zone 7, August 6, 2020		
GOV5-1	Zone 7 Water Agency (Zone 7, or Zone 7 of the Alameda County Flood Control and Water Conservation District) has reviewed the referenced document in the context of Zone 7's mission to provide water supply, flood protection, and groundwater and stream management within the Livermore-Amador Valley. Following are our comments for your consideration:	This comment is an introductory paragraph and no additional response is required.
GOV5-2	1. General: Water-wise Landscaping. Zone 7 encourages the use of sustainable, climate-appropriate, and drought tolerant plants, trees and grasses that thrive in the Tri-Valley area. Find more information at: http://www.trivalleywaterwise.com.	Comment noted.

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TABLE 5-1 RESPONSE TO COMMENTS

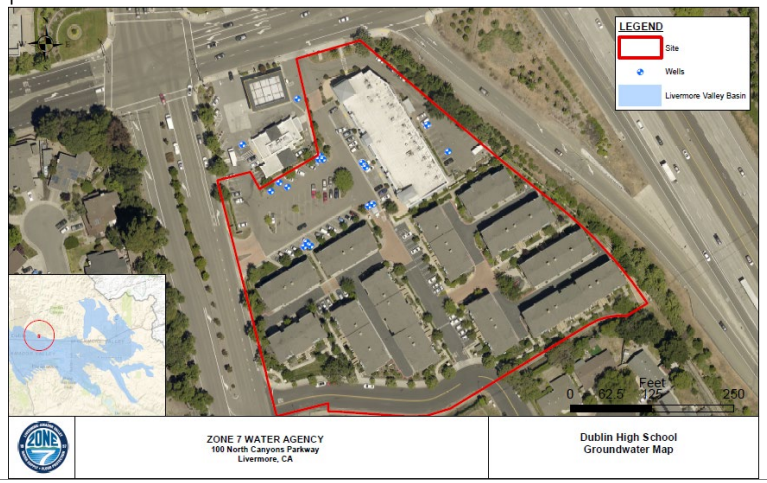
Comment #	Comment	Response
GOV5-3	2. Groundwater Wells. Our records indicate there are 15 monitoring wells in the project area that will need to be protected or decommissioned. The approximate location is shown on the enclosed well map. These wells are part of an ongoing contamination investigation for a neighboring property. Be aware that there may be residual contamination in soil and/or groundwater and plan construction activities accordingly. Please immediately notify Zone 7 Water Agency if any other wells exist in the project area. All well locations should be field verified and noted on the plans. If any of the wells are to be decommissioned, a well destruction permit must be obtained from Zone 7 before the work begins. A Zone 7 drilling permit is also needed for any other water well or soil boring work that may be planned for this project. The drilling permit application and fee schedule can be downloaded from the Zone 7 website at http://www.zone7water.com/permits-a-fees/64-well-drilling-and-destruction-permits. Municipal sewer is available at this site and therefore Onsite Water Treatment is prohibited.  	The area referred to in this comment and shown on the attached map, is located at the southeast quadrant of the Interstate-680/Alcosta Boulevard interchange, located over 5.5 miles from the project site. Therefore the proposed project would have no impacts on the monitoring wells described in this comment. Furthermore, there is currently no proposed Onsite Water Treatment for the proposed project.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV5-4	3. On p. 4.9-4, retitle "Alameda County Flood Control and Water Conservation District" to "Zone 7 Water Agency" and revise two paragraphs to read "The Zone 7 Water Agency (Zone 7) provides regional flood protection for Eastern Alameda County, serving the City of Dublin, as well as the Cities of Livermore, Pleasanton, and Sunol. Zone 7 is one of ten active flood control management zones of the Alameda County Flood Control and Water Conservation District. Zone 7 maintains 37 miles of flood-protection channels within its service area, while also providing environmental enhancements; the remaining channels are owned by private or public utilities, which are responsible for their maintenance. Stormwater from the Livermore-Amador Valley flows towards Dublin from the north and east and continues south before being diverted towards the San Francisco Bay.	Comment noted. Additions to Chapter 4.9, Hydrology and Water Quality, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV5-5	4. On p. 4.9-5, regarding first paragraph discussing Development Impact Fees, Zone 7 typically requires developments to pay their fair share of new impervious surfaces – as is specified in the DEIR. However, because the school construction permitting is overseen by the State Architect's office, the City of Dublin would not be responsible for collection of Development Impact Fees as would typically occur with non-school district projects. Zone 7 requests that DUSD management contact us to discuss the impact fees, which can occur after the CEQA process.	Comment noted. The Dublin Unified School District has been informed of the need to coordinate with Zone 7 to discuss the impact fees. The contact information for District management for this project is Chris Stevens, Chief Facilities Operations Officer, Dublin Unified School District, 7471 Larkdale Avenue, Dublin, CA 94568, Office 925-828-2551 ext. 8061.
GOV5-6	5. On p.4.9-7, suggest revising first paragraph under Regional Drainage to read "The Alameda Creek Watershed covers an area of about 633 square miles in the East Bay, 30 miles southeast of San Francisco. The project site is located within the Arroyo Mocho subwatershed of the Alameda Creek Watershed. Tassajara Creek runs in a north-south direction just west of Tassajara Road. The project site is approximately 0.65 miles east of the Tassajara Creek.	Comment noted. Additions to Chapter 4.9, Hydrology and Water Quality, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV5-7	6. On p. 4.9-7, second paragraph under Regional Drainage, suggest revising last sentence to "Certain watercourses within the City, primarily natural creeks and larger concrete channels, are maintained by Zone 7, located in Livermore."	Comment noted. Additions to Chapter 4.9, Hydrology and Water Quality, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV5-8	7. On p.4.9-8, suggest revising first paragraph to "Responsibility for regional flood protection in Dublin lies primarily with Zone 7, which maintains improved flood-control channels. Prior to the incorporation of the City of Dublin, many development projects within the City limits provided necessary flood control channel improvements. Zone 7 continues to work with local jurisdictions and the development community to identify means and methods to provide greater flood protection in its service area.[10]"	Comment noted. Additions to Chapter 4.9, Hydrology and Water Quality, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV5-9	8. On p. 4.9-17, the drainage from the creation of new impervious surface was analyzed for 2-yr and 10-yr storm events, meeting BAHM modeling requirements; a 100-yr storm event should also be analyzed to determine potential flood impacts of restricting pipe outflow to an existing 60" storm drain.	Comment noted. Although not specifically stated in the hydrology report, the 100-year storm would pass through the on-site storm drainage system and discharge unrestricted in to the existing 60-inch storm drain. This would be accomplished by an outfall/overflow structure at the connection to the 60-inch storm drain. Therefore, there would ne no significant impact.
GOV5-10	9. On p. 4.9-19, refer to "Arroyo Mocho subwatershed" instead of "Arroyo Mocho Canal Watershed."	Comment noted. Additions to Chapter 4.9, Hydrology and Water Quality, of the Draft EIR have been made in Chapter 3 of this Response to Comments document. This revision does not affect any conclusions or significance determinations provided in the Draft EIR.
GOV5-11	10. On p. 4.9-19, an emphasis should be placed on the school district to analyze the stormwater impacts during a 100-yr storm event, since Zone 7's concerns are focused at that level, and no analysis has been provided on how pipe flow restriction may impact the DMA and surrounding areas. We encourage the developer to detain more stormwater onsite if practicable.	The current on-site design detains more than the required design storm events. Each bio-retention basin is designed with a riser pipe the provides for direct discharge into the storm drainage system for events beyond the design events. An outfall/overflow structure will be installed at the connection to the 60-inch storm drainpipe to convey the 100-year storm event. Restrictions on the discharge rate into the existing storm drainage system are required as part of hydromodification. Therefore, the flow restriction will not impact the DMA and surrounding areas.
GOV5-12	In an effort to ensure that mailed notices and referrals from your agency make their way to the appropriate staff at Zone 7 in a timely manner, we are requesting that your databases / mailing lists are updated to reflect the following points of contact, specifically for routine development referrals and for CEQA / environmental reviews. **For CEQA / environmental review:** Zone 7 Water Agency **Attn: CEQA Review / Elke Rank** 100 North Canyons Parkway Livermore, CA 94551 ceqa@zone7water.com Staff contact: Elke Rank, erank@zone7water.com **For development review / referral:** Zone 7 Water Agency **Attn: Dev Referral / Steven Ellis** 100 North Canyons Parkway Livermore, CA 94551 reviewers@zone7water.com Staff contact: Steven Ellis, sellis@zone7water.com	Comment noted. No additional response required.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV6 Ben Huie & Elizabeth Chau, City of Dublin, July 28, 2020		
GOV6-1	Although environmental impacts are determined using VMT, there should still be an intersection analysis at nearby signalized intersections and at project access locations to evaluate if there is any significant queuing. See City of Dublin NOP comments dated 10/30/19 for suggested intersection locations.	Please refer to GOV3-17 for a response to this comment.
GOV6-2	Minor comment: the In and Out trips to do not add up to the total trips.	Please refer to GOV3-20 for a response to this comment.
GOV6-3	"This assumes 4,000 attendees / 2.5 person occupancy x 0.8 mode split = 1,280 vehicles. 1,280 veh x 2 trips per veh = 2,560 two-way trips. This is a rate of 0.64. Math checks out."	Comment noted.
GOV6-4	Just note that the assumptions above were applied across all events equally. However, some of these events would likely have different trip assumptions. For example, a practice may have fewer trips if the student drives themselves or is already at school and is picked up by a parent.	Please refer to GOV3-21 for a response to this comment.
GOV6-5	Adequate bicycle paths should also be provided to these bicycle parking locations. It is recommended that the school provide a pedestrian and bicycle circulation plan to show the anticipated flow of each mode.	Please refer to GOV3-22 for a response to this comment.
GOV6-6	Figure 4.15-4	The comment notes a typo. Figure 4.15-5 was referenced when the proper reference was Figure 4.15-4. However, because a new figure, Figure 4.15-3 has been added within this FEIR. The reference to Figure 4.15-5 within the DEIR now stands correct and therefore changes will only be made to references modified due to the addition of the two new figures within this FEIR. Revisions to Chapter 4.15, Transportation and Traffic, of the Draft EIR have been made in Chapter 3 of this Response to Comments document.
GOV6-7	Will there be any enforcement the school will implement to minimize the amount of overflow parking within the surrounding neighborhood? Many other high school manage parking by having parking permits and policy which designates where staff/student are allowed to park and procedure to handle complains from neighbors.	Please refer to GOV3-23 for a response to this comment.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV6-8	I do not necessarily agree with this statement if you evaluate each MTS roadway individually. Yes, overall there may be a decrease in traffic levels due to shorter trip lengths, however, there may be added trips on certain roadways due to this school. For example, if a student lived to the west of Tassajara Road and currently goes to Dublin High, they would travel westward on Dublin Blvd or I-580 or another east/west arterial. However, with the new school, they would travel eastward and therefore Dublin Blvd or Central Parkway to the east of Tassajara Road would see an increase in vehicles.	Please refer to GOV3-24 for a response to this comment.
GOV6-9	This is a right-on/right out only driveway? Did you consider the impacts to adjacent intersections due to these access limitations?	The driveway referenced by the comment would be restricted to right turn in and right turn out movements only. The associated effects of these turn restrictions were factored into the environmental assessment and Traffic Impact Analysis. No significant environmental impacts would result from the proposed project's driveway design.
GOV6-10	Did the school consider moving the drop-off area from near Building A to west of Building C (near Chancery Ln)? It may be better to have queues spill out onto Chancery Ln as opposed to Central Parkway since it is a local neighborhood street and would not conflict with bicyclists and buses.	Please refer to GOV3-25 for a response to this comment.
GOV6-11	Where do the employee trip lengths come from? The City model?	Please refer to GOV3-28 for a response to this comment.
GOV6-12	This driveway location is not ideal. Entering vehicles would likely be coming from the west so they would need to make an eastbound U-turn at Dublin Blvd/Carnmore Place. The residents at The Terraces at Dublin Ranch may not like the added traffic for this movement.	Please refer to GOV3-26 for a response to this comment.
GOV6-13	It would be very helpful if a figure is provided to show traffic flow throughout the site, particularly how the two northern loading areas will interact with each other and the parking areas in the northeast portion of the site.	Please refer to GOV3-17 and GOV3-26 for a response to this comment.
GOV6-14	Another suggestion to reduce the amount of vehicle conflict at the internal intersection between Building A and Building M drop-off is to relocate the Building A drop-off to Zone A. Vehicles could enter from the southwest driveway on Chancery Lane and then exit the unsignalized driveway on Central Parkway. This would separate the vehicle circulation for the two drop-off areas.	Please refer to GOV3-30 for a response to this comment.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
GOV6-15	Are there no impacts due to potential queues spilling onto Central Parkway? I can see the Building A queue easily spilling onto Central Parkway due to the short throat length at the driveway and having to deal with traffic leaving the Building M drop-off area. As mentioned on Figure 15.4, it would be better if the loading area is relocated to the western portion of the site or at least have the Building A traffic enter from Chancery Ln driveway.	Please refer to GOV3-31 for a response to this comment.
GOV6-16	Are you suggesting that loading and unloading activities remain on Central Pkwy? Even with the proposed mitigation to leave the bulbout at its existing location, there is still potential for vehicles to use this area as a loading/unloading area. This could lead to vehicles blocking the intersection of Central Pkwy/Chancery Ln. Vehicles would also likely block the bike lane on the south side of Central Pkwy.	Please refer to GOV3-32 for a response to this comment.
GOV6-17	I think a "Keep Clear" should be paved in this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site.	Please refer to GOV3-33 for a response to this comment.
GOV6-18	To limit queuing onto Dublin Boulevard, it may be recommended that vehicles go to the easternmost drive aisle first and also remove the parking spaces on the southern edge of the parking lot. The idea is to limit the number of occurrences that a vehicle is entering or leaving a parking space near this driveway that would result in vehicles queuing into Dublin Blvd while waiting for this maneuver to be completed.	Please refer to GOV3-34 for a response to this comment.
GOV6-19	Should an on-site queuing analysis be completed to ensure that there is enough on-site storage to handle the queuing from the drop-off and pick-up areas? Queuing onto adjacent roadways may lead to unsafe conditions.	Please refer to GOV3-31 for a response to this comment.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
Private Individuals and Organizations		
PUB1 Jenni Masse, Thursday, July 23, 2020		
PUB1-1	Hello Chris and DUSD Board Members, I am excited to hear of the plans to break ground on the new Dublin high school! I was at all of the preliminary meetings at Fallon middle school where we discussed the design for the new campus. The original plan was to have the entrance on the other side (Dublin Blvd). Which seemed to make much more sense.	The project's proposed access plan relies on both Central Parkway and Dublin Boulevard to serve project traffic. Two main parking lots and loading-unloading zones are proposed as part of the project; one would be accessed via Central Parkway and one would be accessed via Dublin Boulevard. The Central Parkway side of the project would provide 278 parking spaces (49 percent of the total) and 440 linear feet of loading/unloading zone (57 percent of the total). The Dublin Boulevard side of the project would provide 284 parking spaces (51 percent) and 330 linear feet of loading/unloading zone (43 percent). With this plan project traffic would divide between these two locations rather than be focused at one access point. The plan utilizes the transportation infrastructure and capacity provided by both Central Parkway and Dublin Boulevard to serve the project site.
PUB1-2	I live on Central Parkway and am deeply concerned with the safety of the current plan to make the main entrance of the new high school on Central Parkway. Central Parkway is a smaller street with substantial residential housing. There are many bikers and pedestrians including small children on Central Parkway who would be at risk due to such a heavy flow of traffic from the new school. Also, the traffic would greatly increase all around the neighboring streets which would create a lot of congestion for the community. Changing back to the original plan proposed by the architect and putting the entrance on Dublin Boulevard could greatly reduce this safety concern for residents and students. It could also significantly reduce congestion of neighboring streets. Dublin Boulevard is a main road, built to handle more traffic and would allow cars accessing the high school to flow more freely. Putting the main entrance on Dublin Boulevard would also reduce safety hazards and residential stress. When I attended the meetings I was increasingly frustrated to hear the arguments for putting the entrance on Central Parkway came from people who admitted they were not familiar with the streets. The arguments for changing the design also had nothing to do with the safety and well being of the surrounding community. Even the architect agreed that putting the entrance on a main road like Dublin Boulevard would make more sense.	The DEIR reviewed the project's proposed site plan and recommended mitigation measures for any identified hazards to vehicle, bicycle, pedestrian and transit travel on Central Parkway and other facilities. Additionally, as discussed in Chapter 6, Alternatives of the Draft EIR, the Modified Site Plan Alternative which shifted access and parking to Dublin Boulevard was found to present operational and safety challenges and would, therefore, not provide as safe, efficient and adequate school site access and circulation as the proposed project. It is not anticipated that there will be any significant environmental impacts or issues related to the placement of entrance/exit points on Central Parkway. Please refer to PUB1-1 for an additional response to this comment.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
PUB1-3	I ask that you please consider observing the streets that are being considered and researching the area before putting the entrance on Central Parkway. Please make an educated decision that protects the safety and well being of the surrounding community and reduces the impact on traffic for the neighborhood streets.	Refer to PUB1-1 for a response to this comment.
PUB2 Kristi Marleau, Tuesday, July 21, 2020		
PUB2-1	Regarding the Draft EIR, I would like to see a study of an alternative where the site plan has most of the parking situated on Dublin Blvd instead of the alternative studied where all traffic must travel from Dublin Blvd through to Central Parkway, which significantly affects traffic on both roads. At the Community Workshop in the Fallon MPR in March 2019, the site plan showed a configuration with the main parking lot on Dublin Blvd, but then the plans were changed to put the main parking areas on Central Parkway. I believe that Trustee Blackman was part of the Educational Specification Design team that suggested this change to the plans and can perhaps provide some insight about the reason.	The project's proposed access plan relies on both Central Parkway and Dublin Boulevard to serve project traffic. Two main parking lots and loading-unloading zones are proposed as part of the project; one would be accessed via Central Parkway and one would be accessed via Dublin Boulevard. The Central Parkway side of the project would provide 278 parking spaces (49 percent of the total) and 440 linear feet of loading/unloading zone (57 percent of the total). The Dublin Boulevard side of the project would provide 284 parking spaces (51 percent) and 330 linear feet of loading/unloading zone (43 percent). With this plan project traffic would divide between these two locations rather than be focused at one access point. The plan utilizes the transportation infrastructure and capacity provided by both Central Parkway and Dublin Boulevard to serve the project site.
PUB2-2	For the final EIR, I would encourage studying what the traffic impact would be if the parking were mainly on Dublin Blvd since the current design shows a significant impact from traffic noise to the neighbors along Central Parkway. Dublin Blvd is already a road designed to accommodate large volumes of traffic and allows for non-school traffic to flow around school traffic with more than one lane in each direction.	Refer to PUB1-1 for a response to this comment. Additionally, as discussed in Chapter 6, Alternatives of the Draft EIR, the Modified Site Plan Alternative which shifted access and parking towards Dublin Boulevard was found to present operational and safety challenges and would, therefore, not provide as safe, efficient and adequate school site access and circulation as the proposed project. It is not anticipated that there will be any significant environmental impacts or issues related to the placement of entrance/exit points on Central Parkway.
PUB2-3	For the safety of students traveling to school by bike, on foot, or by public transportation, I would encourage you to keep private car traffic away from Central Parkway, which is currently a relatively safe bike route, and make the school only accessible to pedestrian and bicycle traffic on the Central Parkway side.	Refer to PUB1-1 for a response to this comment. Additionally, a figure depicting the bike and pedestrian circulation plan surrounding the school has been included as Figure 4.15-3 in Chapter 3, Revisions to the Draft EIR.
PUB2-4	Please study the environmental impact of putting the parking, as originally proposed in the first meetings with the public, on Dublin Blvd for the final EIR to see if that would be a viable alternative to the current site plan.	Please refer to PUB1-1 and PUB1-2 for a response to this comment. Additionally, a figure depicting the site plan circulation and parking has been included as Figure 4.15-6 in Chapter 3, Revisions to the Draft EIR.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

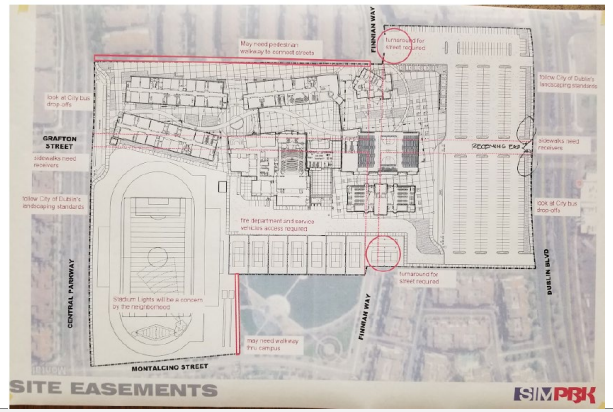
Comment #	Comment	Response
PUB2-5	Also, Fallon Middle School currently has 117 bike parking spaces and is full almost every day, 72 bike parking spots may not be enough.	The DEIR recommends the provision of a minimum of 90 bicycle parking spaces in accordance with the California Green Building Standards Code section 5.106.4.2.1. Of these, 72 should be student spaces and 18 should be staff bicycle parking. The building code's recommendations are relative to standard bicycle parking demands at suburban high schools of this size.
PUB2-6		Please refer to PUB2-1 for a response to this comment. Additionally, a figure depicting the site plan circulation and parking has been included as Figure 4.15-6 in Chapter 3, Revisions to the Draft EIR.
PUB3 Dan Anderson, Monday, June 29, 2020		
PUB3-1	I live in the Sorrento neighborhood close to where this second High School is proposed. I have read the EIR and was generally impressed with the majority of mitigation comments for the identified issues with the exception of one area: TRAFFIC.	The comment expresses an opinion about the proposed project and does not address adequacy of the Draft EIR.
PUB3-2	Here are my concerns: -The site plan rendering shows Central Parkway between Chancery Lane and Grafton Street with 2 lanes of traffic in each direction with the landscaped center divide and a small shoulder in each direction that is currently used for parallel parking. If Central Parkway is expanded to 2 lanes in each direction as shown it will likely mean the elimination of parking on both sides of Central Parkway (eastbound and westbound) as well as potentially shrinking of eliminating the center divide as there is just insufficient space for all elements (not to mention bicycle lanes and the 2 school site entry driveways off of Central Parkway).	The transportation analysis and section reflect the current lane geometry on Central Parkway. The roadway provides one through lane in each direction along the project's frontage. Class II on-street bicycle lanes are also provided and the roadway widens at intersections to provide for turning lanes. Additionally, a figure depicting the site plan circulation and parking has been included as Figure 4.15-6 in Chapter 3, Revisions to the Draft EIR.

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	In addition, similar/matching modifications would likely have to be made for additional portions of Central Parkway, specifically the portions of roadway between Chancery Lane and Brannigan Street and between Brannigan Street and Tassajara Road in both directions.	
PUB3-3	Since Central Parkway would be the only way to directly access the northern portion of the school, I am also very concerned with emergency vehicle access from the direction, especially at high traffic times.	Emergency vehicle access to the site is provided from all four directions - Central Parkway to the north, Dublin Boulevard to the south, Chancery Lane to the west and Finnian Way from both the east and west sides. As detailed in the DEIR, adequate emergency vehicle access to the site is provided.
PUB3-4	The area dedicated to 'Parking Lot B' near Chancery Lane is currently a dirt strip (part of the school site parcel) that is used as overflow parking for residents to the west on Chancery Lane. This is in addition to parallel street parking on the east side of Chancery Lane. Both of these areas are completely full at night (curbside parking remains full all daytime) as there is insufficient resident parking in the complex on the west side of Chancery Lane. These cars would have few alternatives as parking areas on Central Parkway and nearby Montalcino Way are generally full all day as well. In addition, the dead end of Finnian Way is used in a similar manner with overflow parking up on the dirt shoulders and cars parking head on into the court. For most high schools, students utilize available street parking in the neighborhoods surrounding their schools depending on what type of student parking is allowed on campus (availability, cost, closeness to classes/activities), but I am afraid this north end of the school has literally no such resources available to students since the currently used parking will be diminishing under this plan.	Comment noted. While the provision (or lack) of sufficient parking is not considered to be an environmental impact under CEQA, the DEIR provides a summary of the project's proposed parking supply in comparison to the City's Code requirements and expected parking demand. These calculations find that the anticipated need for parking at the site will exceed the available supply. Thus, overflow parking onto the surrounding neighborhood streets is expected. This parking would likely occur within the nearest available and permitted on-street parking. Nevertheless, the District has made an effort to accommodate as much student parking on site as possible. District staff contact information will be available to residents that would like to raise any concerns related to parking conflicts with nearby residences. Staff and student parking on-site as well as separate circulation entrances and exits are depicted in Figure 4.15-6, included in Chapter 3, Revisions to the Draft EIR. Two main parking lots and loading-unloading zones are proposed as part of the project; one would be accessed via Central Parkway and one would be accessed via Dublin Boulevard. The Central Parkway side of the project would provide 278 parking spaces (49 percent of the total) and 440 linear feet of loading/unloading zone (57 percent of the total). The Dublin Boulevard side of the project would provide 284 parking spaces (51 percent) and 330 linear feet of loading/unloading zone (43 percent).
PUB3-5	The proposed entry/exit driveway on Chancery Lane just south of Central Parkway is within short distance of the traffic light at Chancery/Central Parkway. This would likely create traffic gridlock on Central Parkway when arriving to the school and a backup onto Chancery Lane when existing. Upon arriving to the school, especially if there is no drop off zone on Central Parkway, drivers would likely block the intersection when their traffic signal has expired and create difficulty for area residents who are not going specifically to the school. Likewise, the short distance on Chancery Lane to the intersection would likely allow only a few cars onto the street surface	Heavy levels of project traffic are not anticipated on Chancery Lane. The driveways on Chancery provide access to the small parking lot in the project's northeast corner. Direct access from these secondary driveways to the northern or southern pick up and drop off zones is not available. Vehicle queues on the northbound Chancery Lane approach to Central Parkway are not expected to block project driveways.

COMMENTS AND RESPONSES

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	before forcing a backup into the parking lot, especially if parallel street parking on the east side of Chancery Lane is retained which will make Chancery extremely narrow for such activity.	
Comments at the Public Hearing, July 21, 2020		
COM1 Ramya Ramakrishnan, Tuesday, July 21, 2020		
COM1-1	Hello Chris and DUSD Board Members, Ramya Ramakrishnan - Dear DUSD Board of Trustees, superintendent Moirao and staff, As one of the three community members who attended the DEIR meeting at Fallon Middle school, I want to highlight that parking was the biggest issue that was highlighted by the other two community members who live in the neighborhood of the Promenade site. Please plan for adequate parking during construction and plan for sufficient parking spots for later when the school will have more kids and school staff resulting from phase 2 completion.	Comment noted. The District has made an effort to accommodate as much student parking on site as possible. District staff contact information will be available to residents that would like to raise any concerns related to parking conflicts with nearby residences. Staff and student parking on-site as well as separate circulation entrances and exits are depicted in Figure 4.15-6, included in Chapter 3, Revisions to the Draft EIR. Additionally, adherence to Mitigation Measure TRANS-4 would ensure that locations of staging areas, construction worker parking, and off-site parking staging areas are identified. This mitigation measure would also provide a point of contact for City of Dublin residents to obtain construction information, have questions answered, and convey complaints, as related to construction impacts to traffic.
COM1-2	The other issue is traffic. This site is sandwiched between 2 main streets so additional traffic coming from all sides is going to be inevitable. We need to think of creative ways to reduce traffic in this area and make safety a priority for the students and teachers. Hope the district leaders can work with our mayor and city council team to work on solutions that mitigate traffic.	Comment noted.
COM1-3	When can the community expect ground breaking to happen? Please provide more information on the status since we are exactly two years away from making this much awaited school a reality. Thank you. Best Regards.	The current schedule anticipates groundbreaking to begin at the earliest, September 2020.
COM2 Kristi Marleau, Tuesday, July 21, 2020		
COM2-1	Dear Board of Trustees, Regarding the Draft EIR, I would like to see a study of an alternative where the site plan has most of the parking situated on Dublin Blvd instead of the alternative studied where all traffic must travel from Dublin Blvd through to Central Parkway, which significantly affects traffic on both roads. At the Community Workshop in the Fallon MPR in March 2019, the site plan showed a configuration with the main parking lot on Dublin Blvd, but then the plans were changed to put the main parking areas on Central	The project's proposed access plan relies on both Central Parkway and Dublin Boulevard to serve project traffic. Two main parking lots and loading-unloading zones are proposed as part of the project; one would be accessed via Central Parkway and one would be accessed via Dublin Boulevard. The Central Parkway side of the project would provide 278 parking spaces (49 percent of the total) and 440 linear feet of loading/unloading zone (57 percent of the total). The Dublin Boulevard side of the project would provide 284 parking spaces (51 percent) and 330 linear feet of loading/unloading zone (43 percent). With this plan project traffic would

TABLE 5-1 RESPONSE TO COMMENTS

Comment #	Comment	Response
	Parkway. I believe that Trustee Blackman was part of the Educational Specification Design team that suggested this change to the plans and can perhaps provide some insight about the reason.	divide between these two locations rather than be focused at one access point. The plan utilizes the transportation infrastructure and capacity provided by both Central Parkway and Dublin Boulevard to serve the project site.
COM2-2	For the final EIR, I would encourage studying what the traffic impact would be if the parking were mainly on Dublin Blvd since the current design shows a significant impact from traffic noise to the neighbors along Central Parkway. Dublin Blvd is already a road designed to accommodate large volumes of traffic and allows for non-school traffic to flow around school traffic with more than one lane in each direction.	Refer to COM2-1 for a response to this comment. Additionally, as discussed in Chapter 6, Alternatives of the Draft EIR, the Modified Site Plan Alternative which shifted access and parking towards Dublin Boulevard was found to present operational and safety challenges and would, therefore, not provide as safe, efficient and adequate school site access and circulation as the proposed project. It is not anticipated that there will be any significant environmental impacts or issues related to the placement of entrance/exit points on Central Parkway.
COM2-3	For the safety of students traveling to school by bike, on foot, or by public transportation, I would encourage you to keep private car traffic away from Central Parkway, which is currently a relatively safe bike route, and make the school only accessible to pedestrian and bicycle traffic on the Central Parkway side.	Refer to COM1-1 for a response to this comment. Additionally, a figure depicting the bike and pedestrian circulation plan surrounding the school has been included as Figure 4.15-3 in Chapter 3, Revisions to the Draft EIR.
COM2-4	Please study the environmental impact of putting the parking, as originally proposed in the first meetings with the public, on Dublin Blvd for the final EIR to see if that would be a viable alternative to the current site plan.	Refer to COM2-1 and COM2-1 for a response to this comment. Additionally, a figure depicting the site plan circulation and parking has been included as Figure 4.15-6 in Chapter 3, Revisions to the Draft EIR.
COM2-5	Also, Fallon Middle School currently has 117 bike parking spaces and is full almost every day, 72 bike parking spots may not be enough. Thank you.	The DEIR recommends the provision of a minimum of 90 bicycle parking spaces in accordance with the California Green Building Standards Code section 5.106.4.2.1. Of these, 72 should be student spaces and 18 should be staff bicycle parking. The building code's recommendations are relative to standard bicycle parking demands at suburban high schools of this size.

COMMENTS AND RESPONSES

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6. Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the New Comprehensive Dublin High School Project. The purpose of the MMRP is to ensure that the mitigation measures identified in the EIR for the proposed project are implemented. The MMRP includes the following information:

- The full text of the mitigation measures;
- The party responsible for implementing the mitigation measures;
- The timing for implementation of the mitigation measure;
- The agency responsible for monitoring the implementation; and
- The monitoring action and frequency.

DUSD must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
AESTHETICS					
Mitigation Measure AES-4a: District shall plant supplementary trees and landscaping along the southwestern boundary of the proposed project which, in addition to existing landscaping along the southwestern boundary of the proposed project, will further screen and reduce the introduced light and glare impacts on the southwestern project perimeter. The District shall consult with a landscaping expert prior to the installation and operation of the lighting assemblies to determine the appropriate supplementary trees that would be necessary to reduce light and glare impacts. Appropriate supplementary trees and landscaping shall consider the tree species, number of trees, timing for plantings (i.e. time of day and year) as the addition of new non-deciduous trees could result in temporary shadows in the immediate project vicinity as the trees mature. Once the appropriate additional trees have been determined, the trees shall be planted according to the appropriate season as determined by the landscaping expert, which may be prior to the installation of the lighting assemblies or immediately following. The landscaping type, design, and timing shall be established prior to the installation of the field lights. The supplementary trees and landscaping shall be maintained in perpetuity by the District.	Project Applicant/ Construction Contractor	During and after construction	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure AES-4b: The District shall install fencing along the southwestern boundary of the proposed project to reduce the effects of the project lightings light spill. The District shall consult with residents adjacent to the southwestern boundary of the project site prior to the installation and operation of the lighting assemblies to coordinate the appropriate types of fencing to install along the boundary. The fence design, and timing shall be established prior to the installation of the stadium and tennis court lights.	Project Applicant/ Construction Contractor	During construction	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure AES-4c: Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints.	Dublin Unified School District	During school operation and during special events	Dublin Unified School District	District staff to review and verify for compliance	Daily and during special events
Mitigation Measure AES-4d: The District shall install Musco brand lights or any other brand that demonstrates comparable or better light performance and shielding of surrounding properties.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and During Construction	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
AIR QUALITY					
Mitigation Measure AQ-2: The Dublin Unified School District shall specify in the construction bid that the project contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM10] and fine inhalable particulate matter [PM2.5]): ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible. ▪ Pave, apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust. ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways. These measures shall be noted on grading plans prepared by the District. The construction contractor shall implement these measures during ground disturbing activities. The Dublin Unified School District shall verify compliance that these measures have been implemented during normal construction site inspections.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and During Construction	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Mitigation Measure AQ-3: The Dublin Unified School District (District) shall specify in the construction bid that the project construction contractor(s) and subcontractor(s) comply with the following requirements for all off-road equipment greater than 50 hp that will be operating for more than 20 hours over the entire duration of the construction activities at the site: ▪ Have engines that meet either US EPA or California Air Resources Board (CARB) Tier 4 Final emission standards. Ensure that all construction plans submitted to the School District clearly show the selected emission reduction strategy for construction equipment over 50 horsepower. ▪ Maintain a list of all operating equipment in use on the project site for verification by the School District official or his/her designee. The construction equipment list shall state the makes, models, and number of construction equipment on-site. Ensure that all equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. ▪ Communicate with all sub-contractors in contracts and construction documents that all non-essential idling of construction equipment is restricted to 5 minutes or less in compliance with California Air Resources Board Rule 2449 and is responsible for ensuring that this requirement is met.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure AQ-7: Implementation of Mitigation Measures AQ-2 and AQ-3.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities	Dublin Unified School District	Review Construction Plans and Specifications/ Conduct Site Inspections	During Scheduled Construction Site Inspections
BIOLOGICAL RESOURCES					
Mitigation Measure BIO-1: Any active bird nests in the vicinity of proposed vegetation removal and grading shall be avoided until young birds are able to leave the nest (i.e., fledged) and forage on their own. Avoidance may be accomplished either by scheduling grading and vegetation removal during the non-nesting period (September through February), or if this is not feasible, by conducting a pre-construction survey for active nests. A pre-construction survey report verifying that no active nests are present, or that nesting has been completed as detailed below, shall be submitted to the District for review and approval prior to initiation of grading or vegetation	Project Applicant	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and during construction	Qualifying Biologist	Preconstruction Survey	Once for Survey; Ongoing if nesting birds identified and until they have left the nest

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
removal during the nesting season. Provisions of the pre-construction survey and nest avoidance measures, if necessary, shall include the following: ▪ If initial grubbing and grading is scheduled during the active nesting period (March through August), a qualified wildlife biologist shall be retained by the applicant to conduct a pre-construction nesting survey no more than 7 days prior to initiation of grading or vegetation removal to provide confirmation on presence or absence of active nests in the vicinity. ▪ If active nests are encountered, species-specific measures shall be prepared by a qualified biologist through informal consultation with the California Department of Fish and Wildlife (CDFW) and implemented to prevent nest abandonment. At a minimum, vegetation removal and grading in the vicinity of the nest shall be deferred until the young birds have fledged. A nest setback zone of at least 100 feet for raptors and 50 feet for passerine birds shall be established, and all construction-related disturbances shall be prohibited within the nest setback zone. The perimeter of the nest setback zone shall be fenced or adequately demarcated, and construction personnel restricted from the area. ▪ If permanent avoidance of the nest is not feasible, impacts shall be minimized by prohibiting disturbance within the nest setback zone until a qualified biologist verifies either that a) the birds have not begun egg-laying and incubation, or b) the juveniles from the nest are foraging independently and capable of independent survival at an earlier date. ▪ A survey report of findings verifying that any young have fledged shall be submitted for review and approval by the District prior to initiation of grading or vegetation removal in the nest setback zone. Following approval by the District, grading, vegetation removal, and construction in the nest setback zone may proceed as proposed.					
CULTURAL RESOURCES					
Mitigation Measure CULT-2a: Worker Training: proposed project personnel shall receive training regarding the appropriate work practices necessary to effectively implement the cultural resources mitigation measures, including the potential for exposing subsurface cultural resources, including human remains. Training shall be required for all personnel before construction commences and repeated for all new personnel before they begin work on the project. This training program shall be submitted to the District for approval at least 30 days before the start of construction and include	Project Applicant/ Construction Contractor	Before the commencement of construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
procedures to be followed upon the discovery or suspected discovery of unique or historic archaeological materials and human remains, consistent with the procedures set forth in Mitigation Measure CULT-2b and CULT-3.					
Mitigation Measure CULT-2b: If unique or historical archaeological resources are encountered during excavation or construction, construction personnel shall be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources and the District, and a licensed archeologist shall be contacted to evaluate the situation. A licensed archeologist shall be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA Guidelines prior to the submittal of a resource mitigation plan and monitoring program to the District for review and approval prior to the continuation of any on-site construction activity.	Project Applicant/ Construction Contractor	During construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed
Mitigation Measure CULT-3: In the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The City and the Alameda County Coroner's office shall be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission who would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, shall formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, removal and reburial on site, or elsewhere. Associated grave goods are to be treated in the same manner.	Project Applicant/ Construction Contractor	During construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed
GEOLOGY AND SOILS					
Mitigation Measure GEO-1.1: Implement the recommendations found within the project Geotechnical Engineering Investigation (Appendix E): Groundwater Influence on Structures/Construction: ▪ If groundwater is encountered during construction the relevant authority, such as a soils engineer, shall be consulted prior to dewatering the site. Installation of a standpipe piezometer is suggested prior to construction should groundwater levels be a concern. ▪ In addition to the groundwater level, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
the soil with an approved fill material; or mixing the soil with an approved lime or cement product. A relevant authority shall be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.					
Site Preparation – General:					
▪ General site clearing shall include removal of vegetation; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping shall extend to a minimum depth of two to four inches, or until all organics in excess of three percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for use as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.					
▪ It is recommended that compaction test reports be provided to the relevant authority for review. Some of the fill soils had varying strength characteristics ranging from loosely placed to compacted. Therefore, it is recommended that any fill soils which have not been properly compacted and certified be excavated and stockpiled so that the native soil can be properly prepared. Prior to fill placement, the relevant authority shall inspect the bottom of the excavation to verify no additional removal will be required. Supplemental testing shall be performed on the fill soils prior to construction to verify their suitability for use as Engineered Fill.					
▪ Demolition activities shall include proper removal of any surface and buried structures. Any buried structures or loosely backfilled excavations encountered during construction shall be properly removed and the resulting excavations backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.					
▪ Following stripping, demolition activities, and fill removal operations and/or certification verification, the exposed subgrade in building pad, exterior flatwork, and pavement areas shall be excavated/scarified to a depth of at least 12 inches, worked until uniform and free from large clods, moisture-conditioned to at least two percent above optimum moisture, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of recompaction					

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
shall extend 5 feet beyond structural elements. This compaction effort shall stabilize the surface soils and locate any unsuitable or pliant areas not found during the GEI field investigation. ▪ It is recommended that the upper 36 inches of soil within proposed conventional slabs-on-grade and exterior flatwork areas consist of non-expansive Engineered Fill or lime-treated Engineered Fill. The intent is to support slab-on-grade and exterior flatwork areas with 36 inches of non-expansive or lime treated fill. The fill placement serves two functions: 1) it provides a uniform amount of soil which will more evenly distribute the soil pressures and 2) it reduces moisture content fluctuation in the clayey material beneath the building area. The non-expansive fill material shall be a well-graded silty sand or sandy silt soil. The on-site, non-expansive sandy silt and silty sand soils will be suitable for this purpose. A clean sand or very sandy soil is not acceptable for this purpose. A sandy soil will allow the surface water to drain into the expansive clayey soil below, which may result in soil swelling. Imported Fill shall be approved by the soils engineer prior to placement. The fill shall be placed as specified as Engineered Fill. As an alternative, within exterior flatwork areas, the upper 18 inches of soil can consist of lime-treated clayey soils overlain by four inches of aggregate base. However, some movement of the exterior flatwork may occur with this alternative. ▪ It is recommended that any uncertified fill material encountered within pavement areas be removed and/or recompacted. The fill materials shall be moisture-conditioned to near optimum moisture and compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the owner may elect not to recompact the existing fill within paved areas. However, the owner should be aware that the paved areas may settle, which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned to a minimum of two percent above optimum moisture content and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. ▪ Several trees are located within the project site vicinity. If not utilized for the proposed development, tree removal operations shall include roots greater than one inch in diameter. The resulting excavations shall be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase shall be performed.					
▪ Excavations, depressions, or soft and pliant areas extending below planned finished subgrade levels, shall be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. Any buried structures encountered during construction shall be properly removed and backfilled. In general, any septic tanks, debris pits, cesspools, or similar structures shall be entirely removed. Concrete footings shall be removed to an equivalent depth of at least three feet below proposed footing elevations or as recommended by the soils engineer. Any other buried structures shall be removed in accordance with the recommendations of the soils engineer. The resulting excavations shall be backfilled with Engineered Fill.					
▪ A relevant authority shall be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is integral as acceptance of earthwork construction is dependent upon compaction of the material and the stability of the material. The soils engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of the GEI report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in the GEI.					
Supplemental Site Preparation - Geogrid Option					
▪ Subsurface soils within the site are prone to liquefaction under high groundshaking acceleration during an earthquake. If the potential differential settlement is not acceptable, the proposed structures can be constructed over a geogrid reinforced soil mat. If this option is utilized, the building area shall be excavated to a minimum depth of five feet below the bottom of the deepest foundation and the resulting excavation shall be backfilled with a layered system of Engineered Fill and geogrid reinforcement. The depth of the over-excavation shall be measured from existing ground or rough pad grade, whichever is deeper.					
▪ The first layer of geogrid reinforcement will be placed directly at the bottom of the excavation. The geogrid material shall be overlapped a minimum of three feet in all directions. The geogrid strips shall be “shingled’ such that the exposed geogrid edge is opposite the direction of fill placement (as roof shingles to rain runoff). The interlock between					

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TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
the geogrid and Engineered Fill will provide load transfer. No vehicles may traverse the geogrid prior to placement of the Engineered Fill cover. ▪ The next layer of geogrid shall be placed on top of the compacted Engineered Fill. This and subsequent layers need only be overlapped a minimum of one foot on all sides. The geogrid strips of this layer, and all subsequent layers within the footprint, shall be placed with lengths perpendicular to those in the layer immediately below. The fill soils excavated from the area beneath the structure may be moisture-conditioned and recompacted between geogrid layers as reinforced fill. The reinforced fill shall be conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM D1557 Test Method. ▪ A total of five geogrid layers, including the layer at the base of the excavation, shall be installed at vertical increments of one foot. The geogrid layers shall extend to a minimum of five feet beyond the exterior footing perimeter of the structure. The geogrid reinforcement fabric shall consist of Tensar® BX 6100 Geogrid, TriAx TX-5 or equivalent. Any unstable soils within building areas shall be excavated and backfilled with Engineered Fill as requested by the soil engineer. ▪ It is recommended that each building site be excavated at once, and soils be stockpiled. The geogrid and excavated soil may then be placed and recompacted as recommended herein. ▪ Alternatively, the contractor may elect to excavate the site in two stages, where excavated soil can be stockpiled over one half of the site while the other half is mitigated. However, if the contractor elects the option of two stages over the preferred option of using one stage, a minimum of five feet of geogrid from the first half shall overlap the second half. Furthermore, the overlapping geogrid shall be protected from damages, which may be caused by operating equipment. It is further recommended that flexible utility connections be used for the project. Engineered Fill ▪ The organic-free, on-site, upper, native and fill soils are predominately sandy clay, gravelly sandy clay, clayey sand, silty clay, and sandy clay with a trace of gravel. The clayey soils will not be suitable for reuse as non-expansive Engineered Fill. These clayey soils will be suitable for reuse for fill placement within the upper 36 inches of conventional					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
slab-on-grade and exterior flatwork areas, provided they are lime-treated. The preliminary application rate of lime shall be five percent by dry weight. The lime material shall be calcium oxide, commonly known as quick-lime. The clayey soils shall be at or near optimum moisture content during mixing operations. Additional testing is recommended to determine the appropriate application rate of lime prior to placement. These clayey soils will be suitable for reuse as General Engineered Fill, provided they are moisture-conditioned to at least two percent above optimum moisture.					
▪ The preferred materials specified for Engineered Fill are suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase shall be the sole responsibility of the contractor, since he has complete control of the project site at that time.					
▪ Imported Fill shall consist of a well-graded, slightly cohesive, fine silty sand or sandy silt, with relatively impervious characteristics when compacted. This material shall be approved by the soils engineer prior to use and shall typically possess the following characteristics: 20 to 50 percent passing No. 200 sieve, 10 maximum plasticity index, 15 maximum UBC standard 29-2 expansion index.					
▪ Fill soils shall be placed in lifts approximately six inches thick, moisture-conditioned to a minimum of two percent above optimum moisture content, and compacted to achieve at least 90 percent of maximum density as determined by ASTM Test Method D1557. Additional lifts shall not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.					
Drainage and Landscaping					
▪ The ground surface shall slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of five percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations shall be sloped a minimum of two percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations shall be sloped a minimum of one percent away from the structure. Drainage gradients					

MITIGATION MONITORING AND REPORTING PROGRAM

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Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
shall be maintained to carry all surface water to collection facilities and off-site. These grades shall be maintained for the life of the project. ▪ Slots or weep holes shall be placed in drop inlets or other surface drainage devices in pavement areas to allow free drainage of adjoining base course materials. Cutoff walls shall be installed at pavement edges adjacent to vehicular traffic areas; these walls shall extend to a minimum depth of six inches below pavement subgrades to limit the amount of seepage water that can infiltrate the pavements. Where cutoff walls are undesirable, subgrade drains can be constructed to transport excess water away from planters to drainage interceptors. If cutoff walls can be successfully used at the site, construction of subgrade drains is considered unnecessary.					
Utility Trench Backfill ▪ Utility trenches shall be excavated according to accepted engineering practices following Occupational Safety and Health Administration (OSHA) standards by a contractor experienced in such work. The responsibility for the safety of open trenches shall be borne by the contractor. Traffic and vibration adjacent to trench walls shall be reduced; cyclic wetting and drying of excavation side slopes shall be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced, especially during or shortly following periods of precipitation. ▪ Sandy and gravelly soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy and gravelly soils. ▪ Utility trench backfill placed in or adjacent to buildings and exterior slabs shall be compacted to at least 90 percent of the maximum density based on ASTM Test Method D1557. The utility trench backfill placed in pavement areas shall be compacted to at least 90 percent of the maximum density based on ASTM Test Method D1557. Pipe bedding shall be in accordance with pipe manufacturer's recommendations. ▪ The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The contractor shall use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Foundations – Conventional					
▪ The proposed structures may be supported on a shallow foundation system, bearing on a minimum of 24 inches of Engineered Fill. Spread and continuous footings can be designed for the following maximum allowable soil bearing pressures: 1,875 per square foot (psf) for dead load only, 2,500 psf for dead-plus-live load, or 3,325 psf for total load, including wind or seismic loads.					
▪ Exterior footings shall have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Interior footings shall have a minimum depth of 12 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. Footings shall have a minimum width of 12 inches, regardless of load.					
▪ The footing excavations shall not be allowed to dry out any time prior to pouring concrete. It is recommended that footings be reinforced by at least one No. 4 reinforcing bar in both top and bottom.					
Foundations - Post-Tension or Structural Slab					
▪ The buildings may be supported on a post-tension slab or structural slab/foundation system. A structural slab system will help reduce structural damage caused by the potential soil movement of the clayey soils and potential settlement associated with seismic settlement. In addition, utilization of a post-tensioned slab will eliminate the requirement for 36 inches of non-expansive or lime-treated Engineered Fill below slab-on-grade. However, the previously recommended densification of the upper native soils and fill material at the site shall still be performed. In addition, the moisture content of the upper 12 inches of subgrade soil below the post-tensioned slabs shall be increased to a minimum of three percent above optimum moisture content prior to pouring the slabs. The moisture content shall be verified by relevant authorities office within 48 hours of pouring the slabs.					
▪ The thickness of the slab-on-grade and locations and sizing of stiffening beams (if used) shall be determined by the structural consultant during a subsequent structural analysis, which incorporates the GEI design recommendations, including a deepened perimeter or edge section. Post-tensioned slab-on-grade foundations shall be structurally designed to resist or distribute the stresses that are anticipated to develop as the result of supporting soil movement.					

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Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ To aid in reducing the potential for differential soil movement associated with shrinkage and swelling of the fine-grained soils due to changes in moisture contents with changing seasons and landscaping, it is recommended that the exterior edge of the slab be deepened to provide a moisture cut-off around the perimeter of the building. The deepened edge shall extend at least 18 inches below the top of the pad grade, where the top of pad grade is defined as the grade beneath the bottom of the capillary moisture break gravel course or the adjacent exterior subgrade, whichever is deeper. In addition, the slab shall be designed to withstand a potential total and differential static settlement of four inches and two and two thirds inches, respectively. ▪ Slabs adjacent to landscape areas may be subject to additional distress due to increased soil moisture level fluctuations from flowerbed watering, as well as drying from tree root moisture removal. Therefore, we recommend that the school district be notified of the potential for soil movement and resulting slab distress which may occur in these instances of landscape neglect. ▪ In addition, it is recommended the school site maintain consistent moisture levels and avoid extreme fluctuations in any flowerbeds adjacent to structures, and to avoid planting trees with invasive root systems within 10 feet of the structures. ▪ The thickness of the slab-on-grade and locations and sizing of stiffening beams (if used) shall be determined by the project structural engineer. Post-tensioned concrete slabs designed to be of uniform thickness without interior stiffening beams shall be designed in accordance with the procedures presented in Design of Post-Tensioned Slabs-on-Ground. Perimeter columns located outside of the main structure, such as those required for covered terraces or second floor areas projecting out beyond the building footprint shall not be founded on isolated spread footings structurally separated from the slab foundation. ▪ The post-tensioned slab-on-grade foundation system will not prevent the structure from undergoing vertical displacement as a result of shrinkage and swelling of the underlying expansive soils. However, the use of a post-tensioned slab-on-grade foundation system, as opposed to a conventionally reinforced non-structural slab-on-grade, will reduce the amount of objectionable slab cracks and vertical off-set of adjacent concrete panels. However, cracking and distress in brittle finishes, such as stucco and drywall should be anticipated. The use of post-tension					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
reinforcement does not necessarily eliminate the development of bending stresses in the slab due to differential movement of the supporting soils. This type of slab essentially distributes the differential movement of the supported structure over a longer span through controlled bending of the slab.					
Floor Slabs and Exterior Flatwork					
▪ Concrete slab-on-grade shall be appropriate for this project. In areas where it is desired to reduce floor dampness, such as office areas, slab-on-grade construction shall have a water vapor retarder incorporated into the floor slab design. In areas that will utilize moisture-sensitive floor coverings, concrete slab-on-grade floors shall be underlain by a water vapor retarder. The water vapor retarder shall be installed in accordance with accepted engineering practice. The water vapor retarder shall consist of a vapor retarder sheeting underlain by a minimum of three inches of compacted, clean, open graded coarse rock of three quarter of an inch maximum size.					
▪ The floor slab shall be reinforced as a minimum with No. 3 reinforcement bars at 18 inches on-center, each way, within the floor slabs middle-third. Thicker floor slabs with increased concrete strength and reinforcement shall be designed wherever large vehicular loads, heavy concentrated loads, heavy equipment, or machinery is anticipated.					
▪ The exterior floors shall be poured separately in order to act independently of the walls and foundation system. Exterior finish grades shall be sloped a minimum of one to one and a half percent away from all interior slab areas to preclude ponding of water adjacent to the structures. All fills required to bring the building pads to grade shall be Engineered Fills.					
Lateral Earth Pressures and Retaining Walls					
▪ Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 50 pounds per square foot per foot of depth. Walls incapable of this deflection or are fully constrained walls against deflection may be designed for an equivalent fluid at-rest pressure -of 70 pounds per square foot per foot of depth. Expansive soils shall not be used for backfill against walls.					

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ The wedge of non-expansive backfill material shall extend from the bottom of each retaining wall outward and upward at a slope of 2: 1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations or roadways. ▪ During grading and backfilling operations adjacent to any walls, heavy equipment shall not be allowed to operate within a lateral distance of five feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment (“whackers”, vibratory plates, or pneumatic compactors) shall be used to compact the backfill soils. ▪ Retaining and/or below grade walls shall be drained with either perforated pipe encased in free draining gravel or a prefabricated drainage system. The gravel zone shall have a minimum width of 12 inches wide and shall extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill shall consist of native soils, concrete, asphaltic concrete or other suitable backfill to reduce surface drainage into the wall drain system. The aggregate shall conform to Class 2 permeable materials graded in accordance with Section 68-2.02F(3) of the Caltrans Standard Specifications (2018). Prefabricated drainage systems such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, a relevant authority shall review the system for final acceptance prior to installation. ▪ Drainage pipes shall be placed with perforations down and shall discharge in a non-erosive manner away from foundations and other improvements. The pipes shall be placed no higher than six inches above the heel of the wall in the centerline of the drainage blanket and shall have a minimum diameter of four inches. Collector pipes may be either slotted or perforated. Slots shall be no wider than half an inch in width, while perforations shall be no more than a quarter inch in diameter. If retaining walls are less than six feet in height, the perforated pipe may be omitted in lieu of weep holes on four feet maximum spacing. The weep holes shall consist of four inch diameter					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two eight inch square overlapping patches of geotextile fabric (conforming to Section 88-1.02 of the Caltrans Standard Specifications for "edge drains") shall be affixed to the rear wall opening of each weep hole to retard soil piping.					
R-Value Test Results and Pavement Design					
▪ If traffic indices are not available, an estimated (typical value) index of 4.5 may be used for light automobile traffic, and an index of 7 .0 may be used for light truck traffic.					
▪ As indicated previously, fill material is located throughout the site. It is recommended that any uncertified fill material encountered within pavement areas be removed and/ or recompacted. The fill material shall be moisture-conditioned to near optimum moisture and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. As an alternative, the owner may elect not to recompact the existing fill within paved areas. However, the owner shall be aware that the paved areas may settle which may require annual maintenance. At a minimum, it is recommended that the upper 12 inches of subgrade soil be moisture-conditioned as necessary and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.					
Soil Cement Reactivity					
▪ It is recommended a Type II cement be utilized to compensate for sulfate reactivity with the cement.					
Compacted Material Acceptance					
▪ Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the grading contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The soils engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent					

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
compaction is a fill which has been compacted with an in situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded. Testing and Inspection ▪ A relevant authority shall be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Grades or staking are the responsibility of the prime contractor. Limitations ▪ It is suggested that two years be considered a reasonable time for the usefulness of the GEI. ▪ If any variations or undesirable conditions are encountered during construction, the soils engineer shall be notified so that supplemental recommendations may be made.					
Mitigation Measure GEO-1.2: Implementation of Mitigation Measure GEO-1.1.	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction
Mitigation Measure GEO-2a: To minimize potential impacts of erosion during site development, the proposed project would be required to comply with the Statewide General Construction Permit as well as prepare a stormwater pollution prevention plan that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Because the project would disturb one or more acres, coverage under the Statewide General Construction Permit would apply. The General Construction Permit also requires that, prior to the start of construction activities, the project applicant must file Permit Registration Documents with the State Water Resources Control Board, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, stormwater pollution	Project Applicant/ Construction Contractor	During construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
prevention plan, and post-construction water balance calculations. Densification of upper native soils and fill material should also be performed.					
Mitigation Measure GEO-2b: Implementation of Mitigation Measure GEO-1.1.	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction
Mitigation Measure GEO-3: Implementation of Mitigation Measure GEO-1.1.	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction
Mitigation Measure GEO-4: Implementation of Mitigation Measure GEO-1.1.	Project Applicant/ Construction Contractor	During site preparation and before and during construction	Consulting Geotechnical Engineer and Dublin Unified School District	Plan Review and Approval	Plan Approval and during each phase of construction
Mitigation Measure GEO-6: In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the District for review and approval prior to implementation.	Project Applicant/ Construction Contractor	During construction	Consulting Archaeologist and Dublin Unified School District	Plan Review and Approval	During construction

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Greenhouse Gases Emissions					
GHG-1a: The Dublin Unified School District shall specify the installation of a photovoltaic system to offset as much electricity usage as feasible from operation of the high school.	Project Applicant/ Construction Contractor	Prior to and during construction	Dublin Unified School District	Plan Review and Approval	During construction
GHG-1b: The Dublin Unified School District shall design the proposed school to provide parking for low-emitting, fuel-efficient, and carpool/van vehicles. At minimum, the number of preferential parking spaces shall be equal to the Tier 2 Nonresidential Voluntary Measures of California's Green Building Standards Code Section A5.106.5.1.2.	Project Applicant/ Construction Contractor	Prior to and during construction	Dublin Unified School District	Plan Review and Approval	During construction
GHG-1c: The Dublin Unified School District shall design the proposed school to provide electric vehicle (EV) charging stations. At minimum, the number of EV charging stations shall equal to the Tier 2 Nonresidential Voluntary Measures of California's Green Building Standards Code Section A5.106.5.3.2.	Project Applicant/ Construction Contractor	Prior to and during construction	Dublin Unified School District	Plan Review and Approval	During construction
Implementation of Mitigation Measure GHG-3: Implementation of Mitigation Measures GHG-1a, 1b, and 1c.	Project Applicant/ Construction Contractor	Prior to and during construction	Dublin Unified School District	Plan Review and Approval	During construction
Hazardous Resources					
Mitigation Measure HAZ-5: The ALUCP guidance states that an avigation easement, restricting the heights of structures or trees, should be dedicated to the City of Livermore as a condition for any discretionary local approval for any property within the AIA. The avigation easement shall: ▪ Identify the potential hazard associated with the proposed project and its location within protected airspace; ▪ Identify the airport owner's right to clear or maintain the airspace from potential hazards; ▪ Identify the right to mark potential obstructions and notify aviators of such hazards of such hazards; and Provide the right to pass within the identified airspace.	Project Applicant	During construction	Dublin Unified School District	District staff verify that action being taken to dedicate avigation easement	During construction, as needed
Mitigation Measure HAZ-6: Implementation of Mitigation Measure TRANS-4.	Project Applicant/ Construction Contractor	During Construction	Dublin Unified School District	Plan Review and Approval	During construction

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Land Use					
Mitigation Measure LU-2: Implementation of Mitigation Measure HAZ-5.	Project Applicant/ Construction Contractor	During Construction	Dublin Unified School District	District staff verify that action being taken to dedicate avigation easement	During construction, as needed
Noise					
Mitigation Measure NOI-1.2: Prior to holding the first spectator event, the District shall develop and enforce a good-neighbor policy for sports field events. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, loud activity in parking lots upon exiting the field), and events shall be monitored and enforced by the District staff. In addition, the following measures shall be implemented: ▪ During subsequent design phases of the bleachers and PA system, the District's sound system contractor shall create a Stadium Sound System Design Plan. The project's sound system design goal will be to optimize conveying information to the event attendees while minimizing off-site spill-over effects. Design measures include, but are not limited to, bandwidth and peak limiter installation, speaker angle and directivity, and setting a maximum noise level at the PA control console. Prior to the first sports field event, the public address system contractor shall perform a system check-out to verify appropriate sound levels in the seating areas, as well as minimized spill-over sound levels into the adjacent community areas.	Project Applicant	Post-Construction	Dublin Unified School District	District staff to verify compliance	Before scheduled special events
Mitigation Measure NOI-1.3: The project sponsor shall incorporate the following practices into the construction contract agreement documents to be implemented by the construction contractor during the entire construction phase of the project: ▪ The project sponsor and contractors shall prepare a Construction Noise Control Plan. The details of the Construction Noise Control Plan shall be included as part of the permit application drawing set and as part of the construction drawing set. ▪ Limit construction to daytime hours (7:00 a.m. to 7:00 p.m.) and prohibit construction on Sundays and holidays.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities and During Construction	Contractor/Dublin Unified School District	Plan Review and Approval, and site inspections	Continuous during construction

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ At least 30 days prior to the start of construction activities, all off-site businesses and residents within 500' of the project site shall be notified of the planned construction activities. The notification shall include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification shall include the telephone numbers of the District's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint.					
▪ At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the District's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the District.					
▪ Erect a temporary noise barrier between the construction zone and adjacent residences along the eastern and western project boundaries. The temporary sound barrier shall have a minimum height of 12 feet and be free of gaps and holes. The barrier can be (a) a ¾-inch-thick plywood wall OR (b) a hanging blanket/curtain with a surface density or at least 2 pounds per square foot.					
▪ During the entire active construction period, equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.					
▪ Require the contractor to use impact tools that are hydraulically or electrically powered wherever possible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.					
▪ During the entire active construction period, stationary noise sources shall be located as far from sensitive receptors as possible, and they shall be muffled and enclosed within temporary sheds, or insulation barriers or other measures shall be incorporated to the extent feasible.					
▪ The District shall select haul routes that avoid the greatest amount of sensitive use areas.					

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than 5 minutes. During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only. The construction manager shall use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.					
▪ **Mitigation Measure NOI-2:** The use of a static roller in place of a vibratory roller will be used to reduce vibration levels below the performance standard of 0.2 in/sec PPV if paving is required within 25 feet of off-site residential buildings.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval, and site inspections	Continuous during Construction
Recreation					
Mitigation Measure REC-2: Implementation of Mitigation Measures AES-4a, 4b, 4c, 4d, and NOI-1.2.	Project Applicant/ Construction Contractor	Prior to Issuance of Building Permits Authorizing Grading or Other Construction Activities; During Construction; and During school operation and special events	Contractor/Dublin Unified School District	Plan Review and Approval; Conduct Site Inspections; District staff to verify compliance	During Construction; During Scheduled Construction Site Inspections; daily and during special events
Transportation and Traffic					
Mitigation Measure TRANS-1.2: The applicant shall provide a Tier 2 Class I path through the project site from Chancery Lane to Fitzwilliam Street along the Finnian Way right-of-way.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-1.3: Provide at least 90 bicycle parking spaces, with a minimum of 72 student bicycle spaces and a minimum of 18 staff bicycle spaces at the project site. Provide a minimum of two permanent, secure bicycle parking spaces per new building meeting one of the following per the California Green Building Standards Code section 5.106.4.2.2: ▪ Covered, lockable enclosures with permanently anchored racks for bicycles	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Approval	During Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ Lockable bicycle rooms with permanently anchored racks Lockable, permanently anchored bicycle lockers					
Mitigation Measure TRANS-3.1a: The project shall install enhanced school crosswalks at Central Parkway and Grafton Street as well as Chancery Lane and Dunmore Lane.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
▪ **Mitigation Measure TRANS-3.1b:** The project shall install northbound and southbound protective left-turn phasing at the signalized intersection of Central Parkway and Grafton Street to reduce the potential for pedestrian and vehicle conflict.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.2: The final site plan for the project will be analyzed by the project's Civil Engineer to ensure that adequate sight distance is maintained at all driveways. No objects (landscaping, monument signs, etc.) greater than three feet in height will be allowed within the sight distance triangles at driveway intersections. The project's Civil Engineer will review available speed survey information from the City and adjust required sight distance if required in order to comply with applicable sight distance standards.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.3: Provide bollards as a vertical barrier for the westbound left turn lane at Dublin Boulevard and Grafton Street to deter vehicles exiting the site to cross multiple lanes of traffic.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.4: Modify the proposed project to keep the existing bulb out at the bus stop in its current location. Remove the bulb out at the project driveway and stripe a right turn pocket on Central Parkway turning into the project site.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.5: Modify the proposed design at Central Parkway and Grafton Street to provide a minimum throat depth of 100 feet (approximately four vehicles) for vehicles entering and exiting the site.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.6a: A loading and unloading area with one lane is proposed just north of Building A. To provide for safe and efficient access, the project shall stripe the drop-off area to include two lanes, with one lane dedicated and striped for drop-off and pick-up, and one lane dedicated for passing.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.6b: A bi-directional loading and unloading area is proposed just north of the Gymnasium Building M. To provide for safe and efficient access, the project shall restripe the area to be one way with two lanes, one lane for drop-off and pick-up and one lane dedicated for passing.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Mitigation Measure TRANS-3.6c: An on-site intersection is proposed just south of the Central Parkway and Grafton Street project driveway. The proposed configuration does not align with the driveway and provides for an angled off-set intersection. To provide for safe and efficient on-site circulation, the project shall reconfigure and realign this intersection to align with the project driveway and implement side-street stop-control for vehicles leaving the drop-off area just north of Building A. Under this type of intersection control, vehicles leaving the drop off area will be required to stop. "Keep Clear" pavement marking should be installed at this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-3.6d: An on-site intersection is proposed just north of the Dublin Boulevard driveway that the project will reconfigure for modified circulation. To improve safety and circulation for vehicles, pedestrians, and bicycles at this location, the project shall extend the landscaped island adjacent to the furthest south ADA parking spot to connect to the adjacent island, install a landscaped island just north of the existing southeastern island, and direct vehicles with signs using the loading and unloading area to travel counterclockwise around the southerly parking lot.	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval / Conduct Site Inspections	During Scheduled Construction Site Inspections
Mitigation Measure TRANS-4: Preparation of a traffic management plan (TMP), which would: ▪ Provide notice to relevant emergency services, thereby avoiding interference with adopted emergency plans, emergency vehicle access, or emergency evacuation plans. ▪ Identify locations of staging areas, construction worker parking, and off-site parking staging areas, as necessary. ▪ Provide a point of contact for City of Dublin residents to obtain construction information, have questions answered, and convey complaints, as related to construction impacts to traffic. ▪ Identify the traffic controls and methods proposed during each phase of the project construction and the provision of safe and adequate access for vehicles, transit, bicycles, and pedestrians. Traffic controls and methods employed during construction shall be in accordance with City of Dublin standards and the requirements of the Manual of Uniform Traffic Control Devices (FHWA, 2009 MUTCD with Revisions 1	Project Applicant/ Construction Contractor	During Construction	Contractor/Dublin Unified School District	Plan Review and Approval	During Construction, as needed

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 6-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
and 2, May 2012). The TMP shall identify safe access points, routes of travel and other means of access and circulation. Maintain bicycle and pedestrian access along the project frontage on the east-west thoroughfare on Dublin Boulevard and Central Parkway during construction, when feasible. When infeasible, provide appropriate pedestrian and bicycle detours with adequate signing and striping.					
Tribal Cultural Resources					
Mitigation Measure TRI-1.1a: Implementation of Mitigation Measure CULT-2a.	Project Applicant/ Construction Contractor	Before the commencement of construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed
Mitigation Measure TRI-1.1b: Implementation of Mitigation Measure CULT-2b.	Project Applicant/ Construction Contractor	During construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed
Mitigation Measure TRI-1.2: Implementation of Mitigation Measure CULT-3.	Project Applicant/ Construction Contractor	During construction	Consulting Archeologist and Dublin Unified School District	Plan Review and Approval	As needed if resources are unearthed

Appendices

Appendix A: Comment Letters, Appendix

Appendix B: Transportation - Level of Service Analysis

COMMENT LETTER # GOV1

Department of Toxic Substances Control

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July 23, 2020

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NOTICE OF COMPLETION FOR THE DUBLIN UNIFIED SCHOOL DISTRICT, NEW COMPREHENSIVE DUBLIN HIGH SCHOOL PROJECT, CENTRAL PARKWAY AND CHANCERY LANE, DUBLIN, ALAMEDA COUNTY, CALIFORNIA (SCH#2019100001)

Dear Mr. Stevens:

The Northern California Schools Unit of the Department of Toxic Substances Control (DTSC) has received the Notice of Completion (NOC) for the New Comprehensive Dublin High School Project proposed by the Dublin Unified School District (District). The due date to submit comments is August 3, 2020.

The need for the proposed project is based on population growth and increased residential and commercial development in the City of Dublin, which has caused the District's school facilities to exceed capacity. The proposed comprehensive high school would be the District's third high school, and second comprehensive high school in the City of Dublin. The proposed school would consist of classrooms, education and administration-related indoor spaces, as well as outdoor physical education, instructional and recreational components. It would include 559 onsite surface parking spaces and internal drop-off and passing lanes designed for onsite traffic flow and reduced queuing at school entrances. Construction of the proposed project would occur on a total of approximately 23.46 acres. The new comprehensive high school is planned to ultimately accommodate approximately 2,545 students and would be built in two phases (Phase I and Phase II). Project phases would include: **GOV1-01**

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- Phase I: Would accommodate 1,308 students, and would consist of the construction of a 30,110 square foot administration building and kitchen, a 13,811 square foot student union, a 21,004 square foot library, a 31,898 square foot gymnasium, a 17,597 square foot locker room, a 79,673 square foot academy, 18,563 square feet of Visual and Performing Arts Guidance (VAPA) classrooms, a 55,493 square foot all-weather track with drainage, a 96,837 square foot synthetic field with drainage, four overhead field lights, eight tennis courts consisting of 60,719 square feet, and a 135 stall parking garage consisting of 65,529 square feet.

- Phase II: Would accommodate the remaining 1,237 students, and would consist of a second 79,630 square foot academy, a 31,131 square foot theatre, a 831 square foot orchestra pit, a 4,800 square feet maintenance building for the pool, a 1,768 square foot maintenance building, 3,439 square feet of concessions/restrooms, a 34,506 square foot aquatic complex, and 12,733 square feet comprised of 4,000 seat bleachers.

On January 22, 2020, the District and DTSC entered into an Environmental Oversight Agreement (EOA, HSA-FY19/20-055) for the development of a Preliminary Environmental Assessment (PEA) to investigate a potential school site to be located at the intersection of Central Parkway and Chancery Lane in Dublin, California (Site). DTSC is currently in the process of reviewing the draft PEA Report. Site documentation can be found at DTSC's public database: https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60002132. The PEA report presented investigation results and conclusions based on a health risk screening evaluation for the Site conducted by the District in 2018 outside of DTSC's oversight. The PEA investigation included soil sampling for the following chemicals of potential concern (COPCs): **GOV1-01 cont.**

- Organochlorine pesticides (OCPs), metals, polyaromatic hydrocarbons (PAHs), semi-volatile organic compounds (SVOCs), PCBs, TPH as diesel, TPH as motor oil and asbestos from suspect fill material; and
- OCPs and metals from historical agricultural activities.

The PEA report concluded the following:

- COPCs were not detected in native soil or imported fill at levels exceeding conservative risk-based screening values for residential land use, except for arsenic; and that
- Arsenic concentrations were within background levels.

A human health screening evaluation was conducted using an unrestricted residential use scenario and the estimated upper-bound cumulative cancer risk for exposure to COPCs in soil at the Site is 7.5×10^{-7}, which is below the cumulative cancer risk

management goal of 1 x 10^{-6} (<10^{-6}). The estimated upper-bound noncancer hazard index (HI) for exposure to COPCS in soil is 1, which is equal to the noncancer HI risk management goal of 1. The PEA report concluded that COPCs were not detected in soil at levels exceeding conservative risk-based screening values for residential land use and recommended no further action for the Site. DTSC tentatively concurred with the conclusions in a meeting with the District on March 16, 2020 and is currently in the process of approving the PEA Report and issuing a No Further Action (NFA) determination.

DTSC recommends that the draft EIR be revised to include DTSC's approval of the PEA Report and NFA determination once it is issued. **GOV1-01 cont.**

DTSC is also administering the Revolving Loan Fund (RLF) Program which provides revolving loans to investigate and clean up hazardous materials at properties where redevelopment is likely to have a beneficial impact to a community. These loans are available to developers, businesses, schools, and local governments.

For additional information on DTSC's Schools process or RLF Program, please visit DTSC's web site at www.dtsc.ca.gov. If you would like to discuss this matter further, please contact me at (916) 255-3695, or via email at Bud.Duke@dtsc.ca.gov.

Sincerely,

Harold (Bud) Duke, P.G.
Northern California Schools Unit
Site Mitigation and Restoration Program

cc: (see next page)

cc: (via email)

State Clearinghouse
State.clearinghouse@opr.ca.gov
Office of Planning and Research

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DTSC CEQA Unit – Sacramento, CA

NOTICE OF COMPLETION FOR THE DUBLIN UNIFED SCHOOL DISTRICT, NEW COMPREHENSIVE DUBLIN HIGH SCHOOL PROJECT, CENTRAL PARKWAY AND CHANCERY LANE, DUBLIN, ALAMEDA COUNTY, CALIFORNIA (SCH#2019100001)

Reviewed by: _____/_____/_____/_____
OT Peer PM UC

GOV1-01

GOV1-02

GOV1-03

dusdceqa Unknown <dusdceqa@dublinusd.org>

New Comprehensive High School

1 message

Shapiro, Alex <shapiro11@llnl.gov> Mon, Jun 29, 2020 at 7:03 AM
To: "dusdceqa@dublinusd.org" <dusdceqa@dublinusd.org>

Mr. Stevens,

Just a quick question regarding Draft of Impact report received in mail last week.

Does the process of comments and approvals indicate the project has not been approved to proceed and Phase I to be completed by Fall of 2022?

GOV2-01

Regards,

Alex Shapiro

Cell: (925) 642-7615

DUBLIN
CALIFORNIA
THE NEW
AMERICAN
BACKYARD

July 31, 2020

Chris Stevens, Chief Facilities Operations Officer
Dublin Unified School District
7471 Larkdale Avenue
Dublin, CA 94568

sent via email: dusdceqa@dublinusd.org

Subject: City of Dublin Comments on Draft Environmental Impact Report for New Comprehensive High School Project in Dublin, California

Dear Mr. Stevens,

The City of Dublin appreciates the opportunity to provide comments on the Draft Environmental Impact Report (DEIR) prepared for the New Comprehensive Dublin High School (proposed project). The proposed project would develop a new high school and related educational facilities for approximately 2,545 students on a vacant 23.46-acre site located north of Dublin Boulevard, south of Central Parkway, east of Chancery Way, and adjacent to Finnian Way at both the eastern and western boundaries. GOV3-01

The City of Dublin ("City") is concerned about potential impacts in the following topical areas: aesthetics (lighting), energy, hydrology, land use, noise, City parks, utilities & service systems, and traffic.

Aesthetics (Lighting)

In order to address the impact of excessive light spill (24 foot candles) on the residences adjacent to the southwestern boundary of the project site, Mitigation Measure AES-4c requires the following: "*The District shall adhere to a schedule for which lighting assemblies associated with the tennis courts shall be shut off by 9 pm daily. If the District alters the timing schedule for the tennis court lighting, the residents adjacent to the southwestern boundary of the project site shall be consulted.*" The proposed shut off time of 9 pm daily is a critical component to the effectiveness of the mitigation. Allowing the timing set forth in the mitigation to be altered based on an undefined consultation could result in significant impacts to those residents. It is unclear what would be accomplished by consulting with adjacent residents and it seems unlikely that agreement to a later time by all effected residents would ever be achieved. Mitigation Measure AES-4c should be revised to delete the second sentence and add the following: "Signs shall be posted at the tennis court that specify the permitted hours for lighting, and the name and contact number for a designated District complaint and enforcement manager who shall track and respond to lighting complaints." If the District chooses to retain the second sentence of Mitigation Measure AES-4c, additional detail should be provided on the required consultation with the residents, including the purpose of the GOV3-02

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consultation, steps that would be taken, how potential outcomes would be addressed, and measurable standards that demonstrate how potential adverse impacts to the residents would remain less than significant with mitigation. GOV3-02 cont.

Automotive lighting impacts are described on DEIR page 4.1-21 as *"not a new source of light or source of light which is currently uncommon to the area"* and stated to be less than significant without mitigation. The proposed parking area located east of the stadium is substantially closer to the residential uses than any existing automotive light source (i.e., Dublin Boulevard or Central Parkway). Contrary to the determination in the DEIR, the proposed parking area would provide a new light source from vehicles associated with nighttime events for the adjacent residents. This impact should be considered less than significant with mitigation and a mitigation measure similar to measures proposed for the western boundary of the project site requiring fencing and/or landscaping should be included. GOV3-03

Energy

Section 4.5.12 Existing Conditions, Energy Provider (Pg. 4.5-7) should be revised to reflect that EBCE base power portfolio is "Bright" Choice (not Brilliant Choice). Brilliant 100 is no longer an option, as of July 1, 2020. GOV3-04

Hydrology & Water Quality

The DEIR incorrectly states that School Districts are not considered to be "C-3 regulated projects". School Districts are considered Municipal Regional Stormwater Permit (MRP) Provision C.3 Regulated Projects if they are connecting into the municipal separate storm sewer regulated by the MRP. The City of Dublin is a co-permittee under the MRP, and consequently, the school district must comply with MRP requirements, as applicable. Separately, the project is located within the area covered by California Regional Water Quality Control Board San Francisco Bay Region Order No. R2-2003-0031, Waste Discharge Requirements and Water Quality Certification for Dublin Ranch Project, Dublin and Livermore, Alameda County and is required to adhere to the Revised Stormwater Management Plan for Dublin Ranch, City of Dublin, CA developed by Balance Hydrologics, Inc., dated March 2003. There is no mention of this specific Order in the DEIR. GOV3-05

The following additional comments on Hydrology & Water Quality are provided by page reference:

- Pg. 4.9-14
  - The combo flow-volume sizing does not meet hydromodification management (HM) requirements; it is only applicable to LID treatment sizing (third paragraph).
  - Bioretention areas can be unlined (preferred) as long as depth to seasonal high groundwater is >/= 5 feet (fourth paragraph). GOV3-06
- Pg. 4.9-17, Proposed Drainage: The DEIR does not properly mitigate for HM flows. HM Requirements require flows from 10% of the 2-year storm event to the 10-year storm event be mitigated (1st paragraph). The flows must be metered/discharged at 10% of the 2-year storm event. GOV3-07

Land Use Planning

The project site is located within the Planned Development Zoning District Ordinance No. 06-00, which originally included Dublin Ranch Areas F, G and H and now consists only of Area G as shown in Figure 1 below. Dublin Ranch was approved as a large, mixed land use development that contains a series of neighborhoods where housing, jobs, shopping, entertainment, and recreational, educational and cultural activities are clustered and inter-connected to provide a full range of urban experiences. The GOV3-08

existing development within Area G includes four neighborhoods and two City parks which, prior to the proposed project, were planned to be interconnected through the proposed project site by future streets.

On page 4.10-7 of the DEIR, impacts associated with physically dividing an established community are considered less than significant. While typical projects with a potential to divide an established community may include major highways or roadways, storm channels, utility transmission lines or closure of bridges or roadways as stated in the DEIR, the placement of an enclosed development, such as the proposed project creates in the same division. The proposed project divides an established neighborhood by eliminating Finnian Way as a through street and, in particular, would alter public access to Devany Square for residents who live east of the project site and would alter public access to Bray Commons for residents who live west of the project site. It is not clear if the proposed project would allow pedestrian circulation from the east and west terminus of Finnian Way. If pedestrian circulation is prohibited through gates or other means, mitigation measures for impacts to the neighborhood should be provided to ensure circulation through the site to connect the neighborhoods and access to the City parks. **GOV3-08 cont.**

Figure 1. Neighborhood Context

Noise

Noise impacts associated with increased traffic, mechanical equipment such as heating, ventilation and HVAC systems, the stadium PA system and crowd noise during special events were included in the DEIR. However, operational impacts that would permanently increase ambient noise levels in the surrounding area from the school PA equipment (non-stadium PA system), class bell system, and general noise from student activities were not evaluated. The DEIR should disclose the impacts associated with these other operational characteristics not identified and propose mitigation, where feasible. Mitigation should consider limiting the hours of noise generating activities, completing an evaluation of the non-stadium PA system and class bell system to minimize spill-over sound levels into the adjacent community areas (similar to mitigation measure NOI-1.2 identified to address impacts associated with the stadium PA system), and other methods to reduce noise impacts to surrounding residential uses. **GOV3-09**

Parks & Recreation

The proposed project would have a significant physical impact on existing parks and recreational facilities if it would increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated. The DEIR fails to evaluate the potential increase in use of the existing City park, Devany Square. Given the close proximity of Devany Square to the proposed project, the DEIR should evaluate the potential increase in use of that park such that physical deterioration of the park would occur or be accelerated. Mitigation should include limitations on the use of the park by students, increase trash pick-up, possible improvements or changes to the park to address future use by students, and other methods to ensure the impacts to the park are reduced. **GOV3-10**

Utilities & Service

As indicated in the City's comments on Notice of Preparation dated October 30, 2019, among other City facilities, there is an existing 60-inch diameter public storm drain pipe within a 15-foot wide easement running north-south through the subject site. The proposed project shows permanent improvements, such as the sports field, over a portion of this pipeline and within the easement. This section does not identify this existing facility or easement. **GOV3-11**

The Project Description in Section 3.5.5 Storm Drainage (Pg. 3-28) states, "All existing on-site storm drainage inlets/manholes and laterals will be removed," yet the preceding sentences indicate that many of the storm drain pipes will remain in place. The City requires inlets at all low points and manholes for access at all junctions or a maximum of every 400 feet along the pipeline. **GOV3-12**

In addition, Section 3.5.7 is unclear if the public easements for storm drain will remain and continue to be owned and maintained by the City. **GOV3-13**

The City and the District are parties to a stipulation arising out of the District's eminent domain action that, among other things: (a) acknowledges that the Project will likely require the relocation of some of the stormdrain easements and improvements, (b) provides that the Project shall not cause an unreasonable disruption to the stormdrain services, (c) provides that the District and the City will cooperate the identify which easements will be relocated so that the Project will not unreasonably interfere with or impair the continued use of the easements (with the District being responsible for such costs), and (d) finally provides that the court retains jurisdiction to fix the terms and conditions regarding the easements, if the parties are unable to agree. **GOV3-14**

Utility & Service Systems (Pg. 4.17-26) states the following: "The proposed project would comply with the Alameda County Waste Management Authority's Mandatory Compost and Recycling Ordinance, effective January 1, 2020, within the City of Dublin, which means the school would be required to subscribe to recycling and organics collection services." The Mandatory Recycling Ordinance does not apply to State and Federal entities, including public schools. Diversion of organic waste is mandated currently by AB 1826 and diversion of some amount of recyclable is required by Assembly Bill (AB) 341. **GOV3-15**

Section 4.17.3.1 Regulatory Framework, State Regulations should include a discussion of Senate Bill (SB) 1383 organics and recycling diversion requirements, which go into effect in 2022. Additionally, SB 1383 will require the school to begin edible food waste recovery starting in 2024. **GOV3-16**

Transportation & Traffic

The DEIR, on pg. 4.15-1, states that the adopted Senate Bill 743 (SB 743) has resulted in a switch from automobile delay and level of service (LOS) to vehicle miles traveled (VMT) for determination of significant transportation impacts. Although this is correct and VMT should be used for determination of impacts, LOS, delay, and queuing should still be reviewed at certain intersections adjacent to the proposed project. We previously commented on the Notice of Preparation (NOP) for the proposed project, suggesting that 16 intersections and the freeway be evaluated. The City is seeking clarification if any LOS or queuing analysis completed as part of the transportation and traffic review, even if not explicitly shown in the DEIR, but potentially in a Transportation Impact Analysis (TIA).

If a TIA was prepared, please provide to the City for review of potential safety impacts from queueing on pedestrian and bicycle circulation, as well as on traffic operations. A TIA can assist in anticipating the impacts and indicate necessary changes and improvements, such as traffic signal coordination, signal timing upgrades, lane configuration changes at the intersection etc. It can also assist with estimating potential spillover onto neighboring streets. More information is needed regarding traffic volumes and queuing information to determine if the lane configuration proposed at the intersections or if the turn lane storage lengths are sufficient, if the queues will be impact or block any crosswalks or driveways on Grafton Street, Central Parkway, Dublin Boulevard, etc.). **GOV3-17**

It is anticipated that traffic signal coordination along Central Parkway will be necessary and the information on volumes from a TIA can assist in determining what modifications are needed. It's unclear if there is information provided to guide the pick-up/drop-off hours or if they will be staggered.

The traffic signals as the intersection of Central Parkway/Grafton Street, Central Parkway/Chancery Lane, and Central Parkway/Brannigan Street shall be connected to the Traffic Operations Center (TOC) by installation of a fiber optic network from the intersection of Tassajara Road/Central Parkway to these intersections. Currently, the traffic signals at Central Parkway/Lockhart Street and Tassajara Road/Central Parkway are already connected to the central system. Connection to the TOC will allow for traffic signal coordination and traffic monitoring, improving traffic flow and safety for pedestrians and bicyclists. **GOV3-18**

The DEIR does not thoroughly describe the on-site circulation and parking for the proposed project. This may be due to the lack of information provided, however an evaluation of on-site queuing, particularly during the drop-off and pick-up times, may impact the safety of motorists, pedestrians, and bicyclists. It appears that vehicle queues may extend from the drop-off/pick-up area near Building A and onto Central Parkway. This could result in safety issues on Central Parkway near the school access points. Provide an on-site vehicle circulation analysis, and a pedestrian and bicycle circulation analysis. Include on-site queuing and a driveway queuing analysis. **GOV3-19**

The following additional comments on Transportation & Traffic are provided by page reference:

- Pg. 4.15-20: **GOV3-20**
    - Table 4.15-1: The in and out trips do not add up to the total trips.
    - Table 4.15-2: The vehicle occupancy and vehicle trip assumptions in this table were applied across all events equally. However, some of these events would likely have different vehicle occupancies and trips. For example, a football practice may have fewer trips if the student drives themself or is already at school and is picked up by a parent. **GOV3-21**
- Pg. 4.15-22: **GOV3-22**

- Mitigation Measure TRANS-1.3 should include language to ensure that adequate bicycle paths are provided to these bicycle parking locations. It is recommended that the school provide a pedestrian and bicycle circulation plan to show anticipated flows for each mode. This includes the circulation on adjacent roadways to get to the school. **GOV3-22 cont.**

- Pg. 4.15-23: While the lack of sufficient parking is not considered to be a significant impact under CEQA, the DEIR clearly states that insufficient parking will likely impact the neighborhood. The City is requesting the school provide a parking enforcement to minimize the amount of overflow parking within the surrounding neighborhood. Many other high schools manage parking and having parking permits and policies which designate where staff/students are allowed to park and procedures to handle complaints from neighbors. In addition, please show where students and staff will park on-site. Will there be a separate entrance for staff or a way for staff to avoid student vehicle queues? **GOV3-23**
- Pg. 4.15-24: The City does not agree that the overall effect of the project on the regional MTS roadway network would be a decrease in traffic levels if you evaluate each MTS roadway individually. While in the overall there may be a decrease in traffic levels due to shorter trip lengths, there may be added trips on certain roadways due to the proposed project. For example, if a student lived west of Tassajara Road and currently goes to Dublin High School, they would travel westward on Dublin Boulevard or I-580 or another east/west arterial, however, with the proposed project, they may attend the new comprehensive high school and would travel eastward and travel eastbound on Dublin Boulevard or Central Parkway, to the east of Tassajara Road, which will result in an increase in vehicles. **GOV3-24**
- Pg. 4.15-25:
  - Figure 4.15-4 (Note 1.7-1): Did the school district consider moving the drop-off area from near Building A to west of Building C (near Chancery Lane)? Or as an alternative, the drop-off area could be moved to north of Building C and vehicles would be required to enter from the southwestern driveway on Chancery Lane. This would provide a significantly longer on-site storage to reduce the possibility of queues extending off-site onto Central Parkway or Chancery Lane.
  - Figure 4.15-4 (Driveway access on Dublin Boulevard): Since the driveway on Dublin Boulevard is a right-in/right-out only driveway, did the school district consider the impacts to adjacent intersections due to these access limitations? We anticipate many vehicles making an eastbound U-turn at Carnmore Place (The Terraces at Dublin Ranch) traffic signal on Dublin Boulevard. A level of service and queuing analysis should be completed as part of the operational analysis. This proposed driveway location could cause potential safety issues with unsafe movements as vehicles exiting the parking lot may weave across several travel lanes to reach the westbound left-turn lane at the intersection of Grafton Street to make a U-turn. Did the school district consider aligning the parking lot driveway access point with the intersection of Dublin Boulevard and Grafton Street to prevent U-turns and vehicles crossing multiple lanes? **GOV3-25**
  - Figure 4.15-4 (Pedestrian flow on Dublin Boulevard): Based on observation and experience from other schools in Dublin, pedestrians are likely to cross at unmarked crosswalks ("jaywalk") near school entrances. Did the school district consider installing measures to prevent pedestrians from crossing Dublin Boulevard mid-block between Brannigan Street and Grafton Street and between Grafton Street and Keegan Street? It is recommended that pedestrians cross Dublin Boulevard at the marked crosswalks at the intersections of Dublin Boulevard/Brannigan Street, Dublin Boulevard/Grafton Street, and Dublin Boulevard/Keegan Street. **GOV3-26**

- Pg. 4.15-26, Table 4.15-3: Provide clarification on where the employee trip lengths come from and whether they are from the City's travel demand forecast model. **GOV3-27**
- Pg. 4.15-30:
  - Mitigation Measure TRANS-3.3: As indicated in a previous comment, the driveway location on Dublin Boulevard is not ideal. Entering vehicles would likely be coming from the west and would need to make an eastbound U-turn at Dublin Blvd/Carnmore Place (The Terraces at Dublin Ranch). The additional vehicles for this movement may result in queues that exceed the left turn pocket storage. A level of service and queuing analysis should be completed as part of the operational analysis. **GOV3-28**
  - It would be very helpful if a figure is provided to show traffic flow throughout the site, particularly how the two northern drop-off/pick-up areas would interact with each other and the parking areas in the northeast portion of the site. It is recommended that the traffic flow for the two drop-off/pick-up areas be kept separate. Another suggestion to reduce the amount of vehicle conflict and the internal intersection between the Building A and Building M drop-off locations would be to relocate the Building A drop-off to Zone A. Vehicles could enter from the southwest driveway on Chancery Lane and then exit the unsignalized driveway on Central Parkway. This would separate the vehicle circulation for the two drop-off areas. **GOV3-29**
- Pg. 4.15-31:
  - Impact TRANS-3-4: Additional information is required in order to confirm there no impacts due to potential queues spilling onto Central Parkway. For example, Building A queue could easily spill onto Central Parkway due to the short throat length at the driveway and the potential for exiting vehicles to conflict with traffic entering the Building M drop-off area. Please provide an on-site queuing analysis, particularly during drop-off and pick-up times. **GOV3-30**
  - Mitigation Measure TRANS-3-4: The impact of the mitigation measure is unclear. Is the school district suggesting that loading and unloading activities remain on Central Parkway? Even with the proposed mitigation to leave the bulb-out at its existing location, there is still a potential for vehicles to use this area as a loading/unloading area. This could lead to vehicles blocking the intersection of Central Parkway /Chancery Lane. Vehicles would also likely block the bike lane on the south side of Central Parkway. The Livermore Amador Valley Transit Authority (LAVTA) provided the City with comments, dated December 11, 2019, requesting that the school district show how public transit buses, vehicles, pedestrians, and bicycles will all interact in a safe manner on-site and off-site adjacent to the proposed school. **GOV3-31**
- Pg. 4.15-32:
  - Mitigation Measure TRANS-3-6c: Measures such as a "Keep Clear" pavement marking should be installed at this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site. **GOV3-32**
  - Mitigation Measure TRANS-3-6d: To limit queuing onto Dublin Boulevard, it is recommended that vehicles go to the easternmost drive aisle first and to also remove the parking spaces on the southern edge of the parking lot to limit the number of occurrences that a vehicle is entering or leaving a parking space near this driveway, which may result in vehicles queuing into Dublin Boulevard while waiting for this maneuver to be completed. In addition, please show the location of loading/unloading zones and vehicle circulation paths for this parking lot. **GOV3-33**

Thank you for your consideration of our comments. The City looks forward to our continued cooperative and proactive effort in addressing the impacts of the proposed project. Should you have any questions or need additional information, please feel free to contact me at (925) 833-6610 or by e-mail at amy.million@dublin.ca.gov. GOV3-34

Sincerely,

Amy E. Million
Principal Planner

Cc: Jeff Baker, Community Development Director
Kristie Wheeler, Assistant Community Development Director
Andrew Russell, Public Works Director
Laurie Sucgang, City Engineer/Assistant Public Works Director

COMMENT LETTER # GOV4

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D., Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Gavin Newsom
Governor

July 28, 2020

Mr. Chris Stevens
Chief Facilities Operations Officer
Dublin Unified School District
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stevenschris@dublinusd.org

PRELIMINARY ENVIRONMENTAL ASSESSMENT REPORT –
NO FURTHER ACTION DETERMINATION, DUBLIN UNIFIED SCHOOL DISTRICT,
NEW 2ND COMPREHENSIVE HIGH SCHOOL (AKA PROMENADE SITE),
SOUTHEAST CORNER OF CENTRAL PARKWAY AND CHANCERY LANE, DUBLIN,
ALAMEDA COUNTY (PROJECT CODE 204318)

Dear Mr. Stevens:

On June 26, 2020, Terraphase Engineering Inc. (Terraphase), on behalf of the Dublin Unified School District, notified the Department of Toxic Substances Control (DTSC) that it had complied with all public review and comment requirements for the Preliminary Environmental Assessment Report (PEA Report – Terraphase, May 6, 2020), pursuant to Education Code section 17213.1(a)(6)(A). The District made the PEA Report available for public review and comment from May 18, 2020 through June 17, 2020, and a public hearing was held on May 27, 2020. No written comments were received during the comment period.

Additionally, DTSC reviewed the PEA Report received electronically on May 7, 2020. The PEA Report presents investigation results and conclusions based on a screening level human health risk assessment for the proposed New 2nd Comprehensive High School (formerly Promenade Site) to be located southeast of the intersection of Central Parkway and Chancery Lane in Dublin, Alameda County, California (Site). The proposed high school will contain 94 classrooms and accommodate a maximum of 2,585 students. Water and sewer services will be provided by the local municipality. **GOV4-01**

The approximately 23-acre Site is identified by the Alameda County Assessor's Office as Assessor's Parcels Numbers 985-78-2 (0.4 acres), 985-78-3 (0.9 acres), 985-78-4 (9.60 acres), 985-78-5 (4.53 acres), 985-78-6 (3.88 acres), and 985-78-7 (3.71 acres). The Site is bounded to the north by Central Parkway followed by a residential development; to

the east by a residential development; to the south by Dublin Boulevard followed by retail shops; and, to the west by Devany Square and a residential development, then Brannigan Street.

According to the PEA Report, the Site was used for agricultural purposes from at least 1939 until the mid-1990s. From approximately 2005 to 2009, the Site appears to have been used for equipment and materials staging as well as for temporary trailers and offices related to the surrounding residential construction that occurred from 2005 to 2009. Utilities (water, sewer, and storm water lines) were installed and preliminary grading was conducted as part of planned residential development at the Site, but the proposed development ceased in 2009 and the Site has remained vacant since. Approximately 600 cubic yards of soil was imported and placed on the Site in February 2020. This soil was excavated as part of construction activities at the nearby Dublin High School located at 8151 Village Parkway, Dublin, California.

PEA sampling included activities to investigate the Site for potential impacts from the following chemicals of potential concern (COPCs) that may pose a threat to human health or the environment:

- Organochlorine pesticides (OCPs), arsenic, and lead in soils from potential agricultural chemical use; and,
- OCPs, metals, total petroleum hydrocarbons (TPH), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and asbestos in soils from fill material.

GOV4-01 cont.

Arsenic concentrations were within established background concentrations for the area. All other COPCs were detected below their respective screening levels for unrestricted land use. The estimated cumulative cancer risk for the Site was calculated to be 7.5×10^{-7} which is below the risk management goal of 1×10^{-6}. The estimated cumulative non-cancer risk was calculated to be 1 which is equal to the non-cancer hazard index (HI) risk management goal of 1. The PEA Report recommends a "No Further Action" determination for the Site.

Based on review of the PEA Report, neither a release of hazardous material nor the presence of a naturally occurring hazardous substance which would pose a threat to public health or the environment under unrestricted land use was indicated at the Site. Therefore, DTSC concurs with the conclusion of the PEA Report that no further action is required at the Site and hereby approves the PEA Report as final.

Pursuant to Education Code section 17213.2, subdivision (e), if a previously unidentified release or threatened release of a hazardous material or the presence of a naturally occurring hazardous substance is discovered anytime during construction at the Site, the District shall cease all construction activities at the Site and notify DTSC. Additional assessment, investigation or cleanup may be required.

If you have any questions regarding the project, please contact Ms. Elizabeth Tisdale, DTSC Project Manager at (916) 255-6666 or via e-mail at Elizabeth.Tisdale@.dtsc.ca.gov.

GOV4-01 cont.

Sincerely,

Richard Hume, P.E., Chief
Northern California Schools
Site Mitigation & Restoration Program
Department of Toxic Substances Control

cc: (via e-mail)

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ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7
100 NORTH CANYONS PARKWAY • LIVERMORE, CA 94551 • PHONE (925) 454-5000 • FAX (925) 454-5727

August 6, 2020

Chris Stevens, Chief Facilities Operations Officer
Dublin Unified School District
7471 Larkdale Avenue
Dublin, CA 94568

Sent by email to dusdceqa@dublinusd.org

Re: NEW COMPREHENSIVE DUBLIN HIGH SCHOOL PROJECT EIR

Zone 7 Water Agency (Zone 7, or Zone 7 of the Alameda County Flood Control and Water Conservation District) has reviewed the referenced document in the context of Zone 7's mission to provide water supply, flood protection, and groundwater and stream management within the Livermore-Amador Valley. Following are our comments for your consideration: **GOV5-01**

1. General: Water-wise Landscaping. Zone 7 encourages the use of sustainable, climate-appropriate, and drought tolerant plants, trees and grasses that thrive in the Tri-Valley area. Find more information at: http://www.trivalleywaterwise.com. **GOV5-02**

2. Groundwater Wells. Our records indicate there are 15 monitoring wells in the project area that will need to be protected or decommissioned. The approximate location is shown on the enclosed well map. These wells are part of an ongoing contamination investigation for a neighboring property. Be aware that there may be residual contamination in soil and/or groundwater and plan construction activities accordingly. Please immediately notify Zone 7 Water Agency if any other wells exist in the project area. All well locations should be field verified and noted on the plans. If any of the wells are to be decommissioned, a well destruction permit must be obtained from Zone 7 before the work begins. A Zone 7 drilling permit is also needed for any other water well or soil boring work that may be planned for this project. The drilling permit application and fee schedule can be downloaded from the Zone 7 website at http://www.zone7water.com/permits-a-fees/64-well-drilling-and-destruction-permits. Municipal sewer is available at this site and therefore Onsite Water Treatment is prohibited. **GOV5-03**

3. On p. 4.9-4, retitle "Alameda County Flood Control and Water Conservation District" to "Zone 7 Water Agency" and revise two paragraphs to read "The Zone 7 Water Agency (Zone 7) provides regional flood protection for Eastern Alameda County, serving the City of Dublin, as well as the Cities of Livermore, Pleasanton, and Sunol. Zone 7 is one of ten active flood control management zones of the Alameda County Flood Control and Water Conservation District. Zone 7 maintains 37 miles of flood-protection channels within its service area, while also providing environmental enhancements; the remaining channels are owned by private or public utilities, which are responsible for their maintenance. Stormwater **GOV5-04**

from the Livermore-Amador Valley flows towards Dublin from the north and east and continues south before being diverted towards the San Francisco Bay. **GOV5-04 cont.**

4. On p. 4.9-5, regarding first paragraph discussing Development Impact Fees, Zone 7 typically requires developments to pay their fair share of new impervious surfaces – as is specified in the DEIR. However, because the school construction permitting is overseen by the State Architect's office, the City of Dublin would not be responsible for collection of Development Impact Fees as would typically occur with non-school district projects. Zone 7 requests that DUSD management contact us to discuss the impact fees, which can occur after the CEQA process. **GOV5-05**

5. On p.4.9-7, suggest revising first paragraph under Regional Drainage to read "The Alameda Creek Watershed covers an area of about 633 square miles in the East Bay, 30 miles southeast of San Francisco. The project site is located within the Arroyo Mocho subwatershed of the Alameda Creek Watershed. Tassajara Creek runs in a north-south direction just west of Tassajara Road. The project site is approximately 0.65 miles east of the Tassajara Creek. **GOV5-06**

6. On p. 4.9-7, second paragraph under Regional Drainage, suggest revising last sentence to "Certain watercourses within the City, primarily natural creeks and larger concrete channels, are maintained by Zone 7, located in Livermore." **GOV5-07**

7. On p.4.9-8, suggest revising first paragraph to "Responsibility for regional flood protection in Dublin lies primarily with Zone 7, which maintains improved flood-control channels. Prior to the incorporation of the City of Dublin, many development projects within the City limits provided necessary flood control channel improvements. Zone 7 continues to work with local jurisdictions and the development community to identify means and methods to provide greater flood protection in its service area.[10]" **GOV5-08**

8. On p. 4.9-17, the drainage from the creation of new impervious surface was analyzed for 2-yr and 10-yr storm events, meeting BAHM modeling requirements; a 100-yr storm event should also be analyzed to determine potential flood impacts of restricting pipe outflow to an existing 60" storm drain. **GOV5-09**

9. On p. 4.9-19, refer to "Arroyo Mocho subwatershed" instead of "Arroyo Mocho Canal Watershed." **GOV5-10**

10. On p. 4.9-19, an emphasis should be placed on the school district to analyze the stormwater impacts during a 100-yr storm event, since Zone 7's concerns are focused at that level, and no analysis has been provided on how pipe flow restriction may impact the DMA and surrounding areas. We encourage the developer to detain more stormwater onsite if practicable. **GOV5-11**

In an effort to ensure that mailed notices and referrals from your agency make their way to the appropriate staff at Zone 7 in a timely manner, we are requesting that your databases / mailing lists are updated to reflect the following points of contact, specifically for routine development referrals and for CEQA / environmental reviews. **GOV5-12**

For CEQA / environmental review:	For development review / referral:
Zone 7 Water Agency **Attn: CEQA Review / Elke Rank** 100 North Canyons Parkway Livermore, CA 94551 ceqa@zone7water.com Staff contact: Elke Rank, erank@zone7water.com	Zone 7 Water Agency **Attn: Dev Referral / Steven Ellis** 100 North Canyons Parkway Livermore, CA 94551 reviewers@zone7water.com Staff contact: Steven Ellis, sellis@zone7water.com

We appreciate the opportunity to comment on this project. If you have any questions on this letter, please feel free to contact me at (925) 454-5005 or via email at erank@zone7water.com.

Sincerely,

Elke Rank

Elke Rank
cc: Carol Mahoney, Amparo Flores, file

Enclosures (2)

ZONE 7 WATER AGENCY
100 North Canyons Parkway
Livermore, CA

Dublin High School
Groundwater Map

Attachment 2. Well Records Database Search (8/6/2020)
Zone 7 Water Agency

Well ID	Use	Address	City	Longitude	Latitude	ComplDate	PermitNum	Driller
2S/1W 35B 1	monitor	8931 San Ramon Road	Dublin	-121.942	37.72248	<Null>	26033	DELTA ENVIRONMENTAL
2S/1W 35B 3	monitor	8931 San Ramon Road	Dublin	-121.941	37.72257	<Null>	26033	DELTA ENVIRONMENTAL
2S/1W 35B 6	monitor	8999 San Ramon Road	Dublin	-121.942	37.72244	12/20/2007	27216	DELTA CONSULTANTS
2S/1W 35B 7	monitor	8999 San Ramon Road	Dublin	-121.942	37.72246	12/21/2007	27216	DELTA CONSULTANTS
2S/1W 35B 8	monitor	8999 San Ramon Road	Dublin	-121.941	37.72255	12/20/2007	27216	DELTA CONSULTANTS
2S/1W 35B 9	monitor	8999 San Ramon Road	Dublin	-121.941	37.72262	12/19/2007	27216	DELTA CONSULTANTS
2S/1W 35B10	monitor	8999 San Ramon Road	Dublin	-121.941	37.72273	12/19/2007	27216	DELTA CONSULTANTS
2S/1W 35B13	monitor	8999 San Ramon Road	Dublin	-121.942	37.72258	2/22/2011	2011008	CONESTOGA ROVERS
2S/1W 35B14	monitor	8999 San Ramon Road	Dublin	-121.941	37.72258	2/21/2011	2011008	CONESTOGA ROVERS
2S/1W 35B15	monitor	8999 San Ramon Road	Dublin	-121.942	37.72283		0	
2S/1W 35B16	monitor	8999 San Ramon Road	Dublin	-121.942	37.72223	3/2/2011	2011008	CONESTOGA ROVERS
2S/1W 35B17	monitor	8999 San Ramon Road	Dublin	-121.942	37.72221	3/3/2011	2011008	CONESTOGA ROVERS
2S/1W 35B18	monitor	8999 San Ramon Road	Dublin	-121.942	37.72222	3/2/2011	2011008	CONESTOGA ROVERS
2S/1W 35B19	monitor	8999 San Ramon Road	Dublin	-121.941	37.72239	3/1/2011	2011008	CONESTOGA ROVERS
2S/1W 35B21	monitor	8999 San Ramon Road	Dublin	-121.941	37.72239	7/15/2011	2011060	Cascade Drilling

4.15 TRANSPORTATION AND TRAFFIC

This section describes the transportation, circulation, and parking conditions, including transit services and pedestrian and bicycle facilities in the vicinity of the proposed project; discusses the State and local regulations and policies pertinent to transportation and circulation; and assesses the potentially significant transportation and circulation impacts that could result from implementation of the proposed project.

4.15.1 ENVIRONMENTAL SETTING

4.15.1.1 REGULATORY FRAMEWORK

State Regulations

Senate Bill 743

Although environmental impacts are determined using VMT, there should still be an intersection analysis at nearby signalized intersections and at project access locations to evaluate if there is any significant queuing. See City of Dublin NOP comments dated 10/30/19 for suggested intersection locations.

GOV6-01

On September 27, 2013, Senate Bill (SB) 743 was s
adoption of the Sustainable Communities and Clim
signaled its commitment to encourage land use an
that reduce vehicle miles traveled and thereby con
as required by the California Global Warming Solutions Act of 2006 (Assembly Bill 32). In December 2018, the Governor's Office of Planning and Research (OPR) finalized new CEQA guidelines (CEQA Guidelines section 15064.3), that identify vehicle miles traveled (VMT) as the most appropriate criteria to evaluate a project's transportation impacts.

The implementation of SB 743 eliminated the use of criteria such as auto delay, level of service, and similar measures of vehicle capacity of traffic congestion as the basis for determining significant impacts as part of CEQA compliance. The SB 743 VMT criteria promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Regional Regulations

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including Alameda County. It also functions as the federally mandated metropolitan planning organization (MPO) for the region. *Plan Bay Area 2040* is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). *Plan Bay Area 2040*, adopted jointly by Association of Bay Area Governments (ABAG) and MTC July 26, 2017, lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by California Air Resources Board. It serves as a limited and focused update to *Plan Bay Area* (2013), with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the California

Transportation Commission. The project's relationship to GHG emissions reductions is discussed in detail in the Greenhouse Gas Emissions chapter of this Draft EIR.

Alameda County Transportation Commission

Congestion Management Program (CMP) 2019

The Alameda County Transportation Commission (ACTC) CMP describes the strategies to assess, monitor, and improve the performance of the county's multimodal transportation system, address congestion, and ultimately protect the environment with strategies to help reduce greenhouse gas emissions. The CMP indicates that ACTC shall take actions to encourage, supplement, and support transportation demand management (TDM) efforts.

The CMP identifies a network of roadways used to monitor performance related to level of service standards (LOS). To connect transportation and land use, a Metropolitan Transportation System (MTS) with designated roadways for land use purposes is used with the CMP network to link land use and transportation decisions.

While ACTC has not adopted thresholds of significance for land use analysis purposes, the CMP states that projects should consider impacts to all types of transportation modes on CMP MTS roadways, as described below:

- Autos: vehicle delay, if required by local jurisdiction, and consistency with adopted plans.
- Transit: effects of vehicle traffic on mixed-flow transit, transit capacity, transit access/egress, need for future transit service, consistency with adopted plans, and Circulation Element needs.
- Bicycles: effects of vehicle traffic on bicyclists conditions, site development, and roadway improvements, and consistency with adopted plans.
- Pedestrians: effects of vehicle traffic on pedestrian conditions, site development, and roadway improvements, and consistency with adopted plans.
- Other impacts and opportunities: noise impacts for projects near state highway facilities and opportunities to clear access improvements for transit-oriented development projects.

ACTC's policy regarding mitigation measures employed by lead agencies for identified transportation impacts is that, to be considered adequate, the measures must be:

- Sufficient to sustain CMP roadway and transit service standards.
- Fully funded.
- Consistent with project funding priorities established in the Capital Improvement Program of the CMP, the Countywide Transportation Plan, and the Regional Transportation Plan or the federal Transportation Improvement Program.

The designated CMP roadway network was initially developed in 1991 and includes freeways, state highways, and principal arterials that meet criteria defined in the CMP. These roadways are significant for regional trips and connect major activity centers to the regional transportation system. Designated CMP MTS roadways within the study area that project related trips may travel on include:

- I-580 from west of Hacienda Drive to Airway Boulevard
- Fallon Road from I-580 Ramps to Tassajara Road
- Tassajara Road from I-580 Ramps to S Dublin Ranch Road
- Dublin Boulevard from Tassajara Road to Fallon Road

Safe Routes to School (SR2S)

Safe Routes to School (SR2S) is an ACTC approach and program to increase safe active modes of travel to school with the goals of reducing congestion and harmful pollutants around schools and increasing the safety and physical activity of students. The Alameda County SR2S program promotes safe, active, and shared transportation choices for students and parents to travel to and from school with goals to:

- Increase use of active and shared transportation modes to access schools.
- Promote walking, bicycling, and the use of transit as viable, everyday transportation options.
- Increase safe pedestrian/bicycling behaviors.
- Decrease incidence of collisions.
- Increase student and apparent confidence in safe walking/bicycling/transit riding abilities.

Alameda Countywide Bicycle Plan

The ACTC adopted the *Alameda Countywide Bicycle Plan* in October 2012 with the goal of increasing the number of cyclists and bicycling trips in Alameda County while improving bicycling safety. Goals and policies applicable to the proposed project include:

- Compliance with all Complete Streets policies.
- Reduce greenhouse gases (GHGs).
- Reduce the number of vehicle miles traveled.
- Increase safety of bicycle facilities.

Alameda Countywide Pedestrian Plan

The ACTC adopted the *Alameda Countywide Pedestrian Plan* in October 2012 with the goal of increasing the number of pedestrians and walking trips in Alameda County while improving pedestrian safety. Goals and policies applicable to the proposed project include:

- Compliance with all City Complete Streets policies (discussed further below).
- Reduce greenhouse gases (GHGs).

- Reduce the number of vehicle miles traveled.
- Increase safety of pedestrian facilities.

Local Regulations

Tri-Valley Transportation Council

The Tri-Valley Transportation Council (TVTC)—made up of the Cities of Dublin, Livermore, Pleasanton, and San Ramon, the Town of Danville, and the Counties of Alameda and Contra Costa—adopted the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance, September 2017* (Tri-Valley Transportation Plan) as a guide for transportation planning throughout the Tri-Valley. In order to be designated a Route of Regional Significance, a road must connect two or more subareas, cross county boundaries, carry a significant amount of through traffic, or provide access to a regional highway or transit facility. Routes of Regional Significance within the study area include Interstate 580, Central Parkway, Dublin Boulevard, and Fallon Road.

The Tri-Valley Transportation Plan includes the following goals and policies applicable to the proposed project:

- Integrate transportation planning with planning for air quality, community character, and other environmental factors.
- Support corridor management programs to make the most efficient, effective, and safe use of existing facilities and services.
- Support incident management programs to maintain mobility when accidents or breakdowns occur on major transportation facilities.
- Consider both the need for vehicular mobility and congestion reduction, and such livability concepts as walkability, bicycle access, and community character.
- Maintain and actively pursue enhanced and expanded public transit service, ridesharing, and non-motorized mode options and trip reduction programs in order to increase accessibility, to increase the transit share of travel in the Tri-Valley, and to increase average vehicle occupancy.
- Manage school-related traffic to enhance safety and reduce peak period traffic impacts.
- Support arterial traffic management strategies that address hotspots at critical intersections and approaches.

City of Dublin General Plan

The City of Dublin's General Plan envisions a transportation system that promotes transportation options and independent mobility, increases community safety, encourages healthy, active living, reduces environmental impacts, minimizes impacts to climate change from vehicle emissions, and supports greater social interaction and community identity. These goals can be accomplished by a comprehensive network of safe, comfortable, and convenient travel for all users and modes. The General Plan Land Use

and Circulation Element includes the following guiding and implementing policies applicable to the proposed project:

Roadways

- Provide an integrated multi-modal circulation system that provides efficient vehicular circulation while providing a design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, persons with disabilities, seniors, children, youth, and families; and encourages pedestrian, bicycle, transit, and other non-automobile transportation alternatives.
- Provide continuity with existing streets, include sufficient capacity for projected traffic, and allow convenient access to planned land uses.

Alternative Transportation

- Support improved local transit as essential to a quality urban environment, particularly for residents who do not drive.
- Encourage improvements in the Enhanced Pedestrian Areas to improve the walkability of these areas. The purpose of the Enhanced Pedestrian Area designation is to ensure that development within the area is designed to encourage pedestrian trips. The project site is entirely within an Enhanced Pedestrian Area.
- Maintain enhanced signal coordination and limit intersection delays on major and Rapid transit routes to minimize delays to transit service.
- Require dedication of land and the construction of improvements to support the use of public transit in the community. Improvements could consist of bus turnouts, shelters, benches, real-time arrival information, and other facilities that may be appropriate.
- Require developers in the Enhanced Pedestrian Areas to provide sidewalks, landscaping and safe connections from the building to the sidewalk to encourage pedestrian use within the area.

Complete Streets

- Plan for all users by creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that meets the requirements of currently adopted transportation plans and serves all categories of users.

Pedestrian Routes and Bikeways

- Provide safe, continuous, comfortable and convenient bikeways throughout the City.
- Improve and maintain bikeways and pedestrian facilities and support facilities in conformance with the recommendations in the Dublin Bicycle and Pedestrian Master Plan.
- Enhance the multi-modal circulation network to better accommodate alternative transportation choices including BART, bus, bicycle, and pedestrian transportation.

- Provide comfortable, safe, and convenient walking routes throughout the City and, in particular, to key destinations such as Downtown Dublin, the BART Stations, schools, parks, and commercial centers.
- Ensure on-going maintenance of bikeways, bicycle support facilities and pedestrian facilities that are intended for public use and located on private property in conjunction with development proposals.

City of Dublin Bicycle and Pedestrian Master Plan

The *Bicycle and Pedestrian Master Plan* (BPMP), adopted in 2014, provides an overview of the existing bicycle and pedestrian facilities within Dublin, a recommended pedestrian and bikeway network, and design guidelines. The purpose of the City of Dublin Bicycle and Pedestrian Plan is to provide a policy and implementation framework for maintaining and improving bicycle and pedestrian infrastructure in the City to provide safe, comfortable, and attractive facilities that meet the needs of users of all ages and abilities and connect users with key destinations—schools, residential neighborhoods, parks, shopping areas, and job centers— within the City and in adjacent jurisdictions. The plan is in alignment with the Transportation Element of the General Plan's goals and policies. The BPMP has the following goals and policies:

- Support bicycling and walking as practical, healthy, and convenient alternatives to automobile use in Dublin.
- Implement a well-connected active transportation system to attract users of all ages and abilities.
- Incorporate the needs and concerns of bicyclists and pedestrians in all transportation and development projects.
- Support infrastructure investments with targeted bicycle and pedestrian education, encouragement, enforcement, and evaluation programs
- Maximize multi-modal connections in the transportation network.

4.15.1.2 EXISTING TRANSPORTATION NETWORK

Roadway Network

The City of Dublin is located in Alameda County, California, and is adjacent to the Cities of Pleasanton, Livermore, and San Ramon to the south, east, and north, respectively. The project site is in the eastern portion of Dublin, bounded by existing residences to the north, east, and west and retail to the south.

Regional access to the site is provided by Interstate 580 (I-580). Central Parkway, Dublin Boulevard, Fallon Road, Gleason Drive, and Tassajara Road provide local access. The following descriptions are provided for roadways that would provide access to the site and are most likely to serve the majority of project generated vehicle, bicycle, pedestrian and transit traffic.

Interstate 580 (I-580) is an east-west freeway that extends from San Rafael to Tracy. It is defined as a Route of Regional Significance in the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance.* Routes of regional significance are roadways that connect two or more subareas, cross County boundaries, carry significant through traffic, and/or provide access to a regional highway or transit facility. The facility provides four general purpose travel lanes and one high occupancy vehicle (HOV)

express lane in each direction within the study area, with interchanges at Tassajara Road and Fallon Road. Signalized intersections at the off-ramps are operated by the California Department of Transportation (Caltrans).

Central Parkway is an east-west roadway with one travel lane in each direction and a center median within the study area. It is defined as a Route of Regional Significance in the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance.* The Dublin General Plan classifies Central Parkway as an arterial street within the study area. The Dublin General Plan states arterial streets are designed to distribute localized trips. The posted speed limit is 35 miles per hour (mph). Sidewalks with landscaped buffers are provided for the entire length of the study area. Central Parkway primarily serves residential uses.

Dublin Boulevard is an east-west roadway with four to five lanes and a center median. Two travel lanes in each direction are provided between Tassajara Road and Brannigan Street, and two travel lanes going east and three travel lanes going west are provided between Brannigan Street and Fallon Road. Dublin Boulevard is defined as a Route of Regional Significance in the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance*. The Dublin General Plan classifies Dublin Boulevard as a collector street within the study area. The Dublin General Plan states collector streets serve primarily to circulate localized traffic and to distribute traffic to and from arterials. The posted speed limit is 45 mph. Sidewalks with landscaped buffers are provided on both sides of the road. Dublin Boulevard primarily serves commercial uses.

Fallon Road is a north-south roadway with a center median. Two travel lanes are provided in each direction between I-580 and Central Parkway and three travel lanes in each direction between Central Parkway and Gleason Drive. It is defined as a Route of Regional Significance in the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance*. The Dublin General Plan classifies Fallon Road as an arterial street within the study area. The posted speed limit is 40 mph. Sidewalks with landscaped buffers are provided on the west side for the entire length of the study area and on the east side between Gleason Drive and Central Parkway. Fallon Road serves residential and commercial uses.

Gleason Drive is an east-west roadway with three to four lanes and a center median. One eastbound lane and two westbound lanes are provided between Tassajara Road and Brannigan Street. Two travel lanes in each direction are provided between Gleason Drive and Fallon Road. The Dublin General Plan classifies Gleason Drive as a collector street. The posted speed limit is 40 mph. A sidewalk is provided on the north side between Tassajara Road and Brannigan Street. Sidewalks with landscaped buffers are provided on both sides between Brannigan Street and Fallon Road. Gleason Drive primarily serves residential uses within the study area.

Tassajara Road is a north-south roadway with four to five lanes and a center median. Two lanes in each direction are provided between Gleason Drive and Central Parkway. Two northbound lanes and three southbound lanes are provided between Central Parkway and I-580. It is defined as a Route of Regional Significance in the *Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance*. The Dublin General Plan classifies Tassajara Road as an arterial street within the study area. The posted speed limit is 45 mph. Sidewalks are provided on the west side of the roadway. Tassajara Road primarily serves as a commercial corridor within the study area.

Brannigan Street is a north-south roadway with one travel lane in each direction. It is classified as a collector street in the Dublin General Plan. The posted speed limit is 25 mph. Sidewalks with landscaped buffers are provided on the east side of the roadway. On-street parking is allowed on the east side of the roadway. Brannigan Street provides access to and from residences east and north of the project site.

Chancery Lane is a north-south roadway with one travel lane in each direction directly east of the project site. It is classified as a local residential street in the Dublin General Plan. The posted speed limit is 25 mph. Sidewalks are provided on the west side only south of Central Parkway and provided on both sides north of Central Parkway. On-street parking is allowed on either side of the roadway. Chancery Lane provides access to and from residences east and north of the project site.

Grafton Street is a north-south roadway with one travel lane in each direction. It is classified as a collector street in the Dublin General Plan. The speed limit is not posted within the study area. Sidewalks with landscaped buffers are provided on either side of the roadway and on-street parking is allowed. Grafton Street serves residences north of the project site.

Keegan Street is a north-south roadway with one travel lane in each direction. It is classified as a collector street in the Dublin General Plan. The speed limit is not posted. Sidewalks are provided for the entire length within the study area. On-street parking is allowed on some portions of the roadway. Keegan Street provides access to and from residences to the west and north of the project site.

Lockhart Street is a north-south roadway with one travel lane in each direction. It is classified as a collector street in the Dublin General Plan. Sidewalks are provided for the entire length within the study area. On-street parking is not allowed. Lockhart Street provides access to and from residences to the west and north of the project site.

Proposed future roadway improvements in the study area, based on the City's General Plan and Eastern Dublin Traffic Impact Fee Program, a program that defines improvements and facilities located exclusively in the Eastern Dublin Specific Plan area in which developers contribute a proportionate share to,] include:

- Tassajara Road between Gleason Drive and Central Parkway widen from two lanes to three lanes in each direction
- Tassajara Road between Central Parkway and Dublin Boulevard widen from two lanes to three lanes in the northbound direction
- Tassajara Road between Dublin Boulevard and I-580 Ramps widen from two lanes to four lanes in the northbound direction
- Dublin Boulevard between Tassajara Road and Grafton Street widen from two lanes to three lanes in the westbound direction
- Dublin Boulevard between Tassajara Road and Brannigan Street widen from three lanes to four lanes in the eastbound direction
- Dublin Boulevard between Keegan Street and Fallon Road widen from two lanes to three lanes in the eastbound direction

- Dublin Boulevard east of Fallon road widen from one lane to three lanes in both directions
- Fallon Road between Central Parkway and I-580 Ramps widen from two lanes to three lanes in each direction

Pedestrian and Bicycle Facilities

This section identifies pedestrian and bicycle facilities in the transportation study area.

Pedestrian Facilities

Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals. Existing pedestrian facilities are shown on Figure 4.15-1. Pedestrian facilities bordering the project site include asphalt pedestrian pathways on Central Parkway and Dublin Boulevard, a sidewalk on the eastern perimeter, and a sidewalk at the western border between Finnian Way and Dublin Boulevard. No pedestrian facilities are provided along the site's western perimeter on Chancery Lane. On project-related roadways, most roadways have sidewalks, most intersections have crosswalks, and all signalized intersections provide pedestrian push-button actuated signals. The following provides a more detailed description of existing pedestrian facilities:

Sidewalks on both sides of the road

- Gleason Drive – west of Tassajara Road; between Brannigan Street and Fallon Road
- Central Parkway – west of Tassajara Road; between Brannigan Street and Fallon Road
- Dublin Boulevard – west of Tassajara Road; between Brannigan Street and Carnmore Place; between approximately 415 feet west of Fallon Gateway and Fallon Road
- Tassajara Road – north of Gleason Drive
- Brannigan Street – north of Central Parkway
- Chancery Lane – between Dunmore Lane and Finnian Way
- Grafton Street – north of Dublin Boulevard
- Keegan Street-Lee Thompson Street
- Lockhart Street
- Fallon Road – north of approximately 590 feet north of Dublin Boulevard

Sidewalk on one side of the road

- Gleason Drive – between Tassajara Road and Brannigan Street
- Dublin Boulevard – between Tassajara Road and Brannigan Street; between Carnmore Place and approximately 415 feet west of Fallon Gateway
- Tassajara Road – south of Gleason Drive
- Brannigan Street – between Central Parkway and Dublin Boulevard

- Chancery Lane – between Central Parkway and Dunmore Lane
- Fallon Road – south of approximately 590 feet north of Dublin Boulevard

No sidewalk

- Central Parkway – between Tassajara Road and Brannigan Street
- Brannigan Street – south of Dublin Boulevard
- Grafton Street – south of Dublin Boulevard

Signalized intersection with crosswalk(s)

- Tassajara Road/Gleason Drive
- Tassajara Road/Central Parkway
- Tassajara Road/Dublin Boulevard
- Brannigan Street/Gleason Drive
- Brannigan Street/Central Parkway
- Brannigan Street/Dublin Boulevard
- Chancery Lane/Central Parkway
- Grafton Street/Gleason Drive
- Grafton Street/Central Parkway
- Grafton Street/Dublin Boulevard
- Keegan Street/Central Parkway
- Keegan Street/Dublin Boulevard
- Lockhart Street/Gleason Drive
- Lockhart Street/Central Parkway
- Lockhart Street/Dublin Boulevard
- Fallon Road/Gleason Drive
- Fallon Road/Central Parkway
- Fallon Road/Dublin Boulevard

Unsignalized intersection with crosswalk(s)

- Brannigan Street/Finnian Way
- Chancery Lane/Finnian Way
- Finnian Way/Dublin Boulevard
- Grafton Street/Brannigan Street
- Grafton Street/Kohnen Way-Madden Way
- Keegan Street/Finnian Way
- Keegan Street/Maguire Way
- Lockhart Street/Finnian Way

Unsignalized intersection without crosswalk(s)

- Lockhart Street/Maguire Way

Bicycle Facilities

Bicycle facilities in Dublin include the following:

Class I Bike Paths

Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.

Existing Class I bike facilities:

- Brannigan Street – north of Dublin Boulevard
- Grafton Street – north of Central Parkway; eastern border of project site between Central Parkway and Finnian Way
- Keegan Street-Lee Thompson Street – between Palermo Way and Dublin Boulevard
- Lockhart Street between Gleason Drive and Dublin Boulevard

City of Dublin Bicycle and Pedestrian Master Plan proposed Class I bike facilities:

- Gleason Drive – between Tassajara Road and Brannigan Street
- Central Parkway – east of Fallon Road
- Central Parkway – between Tassajara Road and Brannigan Street
- Dublin Boulevard – east of Fallon Road
- Finnian Way – between Chancery Lane and Fitzwilliam Street

Class II Bike Lanes

Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Existing and proposed bicycle facilities are shown on Figure 4.15-2 and described below. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).

Existing Class II bike facilities on both sides of the road:

- Gleason Drive – west of Tassajara Road; between Brannigan Street and Fallon Road
- Central Parkway
- Dublin Boulevard – west of Keegan Street
- Tassajara Road
- Fallon Road – north of approximately 415 feet north of Dublin Boulevard

Existing Class II bike facilities on one side of the road:

- Dublin Boulevard – between Keegan Street and Fallon Road
- Fallon Road – between approximately 415 feet north of Dublin Boulevard and Fallon Gateway

City of Dublin Bicycle and Pedestrian Master Plan proposed Class II bike facilities on both sides of the road:

- Gleason Drive – between Tassajara Road and Brannigan Street
- Dublin Boulevard – east of Lockhart Street

Class III Bike Routes

Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

There are no existing Class III bike facilities within the study area.

City of Dublin Bicycle and Pedestrian Master Plan proposed Class III bike facilities:

- Grafton Street – between Gleason Drive and Central Parkway
- Lockhart Street – between Gleason Drive and Dublin Boulevard

Transit Service

Wheels

The Livermore Amador Transit Authority (LAVTA) runs the Tri-Valley Wheels transit service. Wheels provides fixed-route transit service in Alameda County, serving the communities of Dublin, Livermore, Pleasanton, and unincorporated portions of the County. Routes 2, 30R, 501, 502, and 504 operate and have stops within in the vicinity of the project site. The existing bus routes are shown on Figure 4.15-3.

Route 2 is a local connector providing hourly service during peak times on weekdays between the East Dublin/Pleasanton BART station, the office and commercial districts along Dublin Boulevard, and the residential neighborhoods in northeast Dublin. The route has designated stops along Central Parkway within the study area. Daily boardings on Route 2 are approximately 40 passengers.

Route 30R (Rapid) is a rapid bus route that provides service with approximately 15-minute headways during the day on weekdays and hourly on weekday evenings and all-day on weekends. It has designated stops along Dublin Boulevard within the study area. Route 30R provides a connection to the Dublin Bay Area Rapid Transit (BART) fixed rail transit station for regional travel. Weekday daily boardings on Route 30R are approximately 1,800 passengers according to LAVTA. With 60 weekday daily roundtrips, most buses operate with additional available capacity.

Routes 501, 502, and 504 are designated school routes operated by Wheels for the Dublin Unified School District. These routes operate on school days in the morning and afternoon according to school schedules. The routes do not operate on weekends, holidays, and non-school days. Route 501 (A, B, and C) provides service for students living near Positano Hill east of the project site to the existing Dublin High School. Route 502 provides service for students living near Emerald Glen east of the project site to Wells Middle School and Dublin High School. Route 504 provides service for students living near Dublin Ranch, which is where the project site is located, to Dublin High School. Routes 501, 502, and 504 have designated stops within the study area. The average per trip boardings on Route 501, 502 and 504 are approximately 50, 56 and 51 boardings per trip, respectively according to LAVTA ridership data.

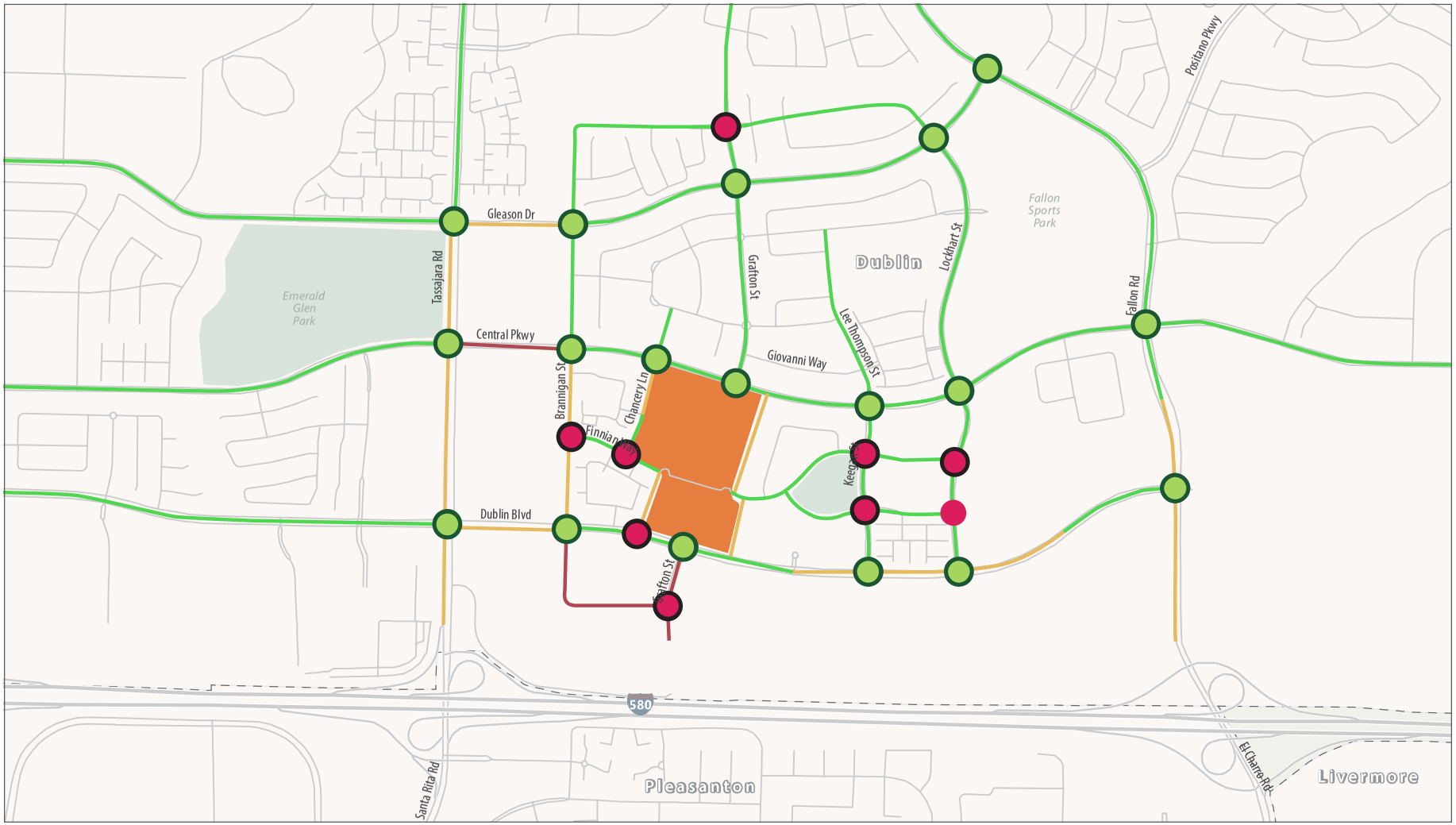
It should be noted that the existing Wheels school route structure is designed to carry students from residences in eastern Dublin to schools located in western and central areas of the City. With the construction of the project, many of these high school students will attend the new high school located nearer to their place of residence. With this change these students may elect to walk or bike to school or choose another alternative mode of travel. It is likely that Wheels ridership on school routes connecting east and central/west Dublin will decline and that their service will be adjusted accordingly. These adjustments would potentially include new routes providing connections for students to the new high school.

Bay Area Rapid Transit (BART)

BART provides regional transportation connections to much of the Bay Area and the Dublin/Pleasanton line provides direct access to San Francisco, with several stops in Oakland where connections may be made to other lines. The closest BART station to the project site is the East Dublin/Pleasanton Station located approximately two miles to the west. BART train frequency on this route ranges between 15 to 20 minutes from approximately 5:00 AM to 12:00 AM. Based on 2020 data from BART, approximately 8,000 passengers per day enter/exit the BART system at the East Dublin/Pleasanton station.

LAVTA GoDublin! Program

In addition to the regular transit service to the study area, the LAVTA GoDublin! Program provides dial-a-ride door-to-door service within the LAVTA service area for disabled people of all ages and senior citizens. The program will also pay for half (up to $5) of an Uber or Lyft fare for trips starting and ending in Dublin.



Source: Fehr & Peers, 2020. PlaceWorks, 2020.

Project Site

Pedestrian Facilities

Sidewalk on Both Sides

Sidewalk on One Side

No Sidewalk

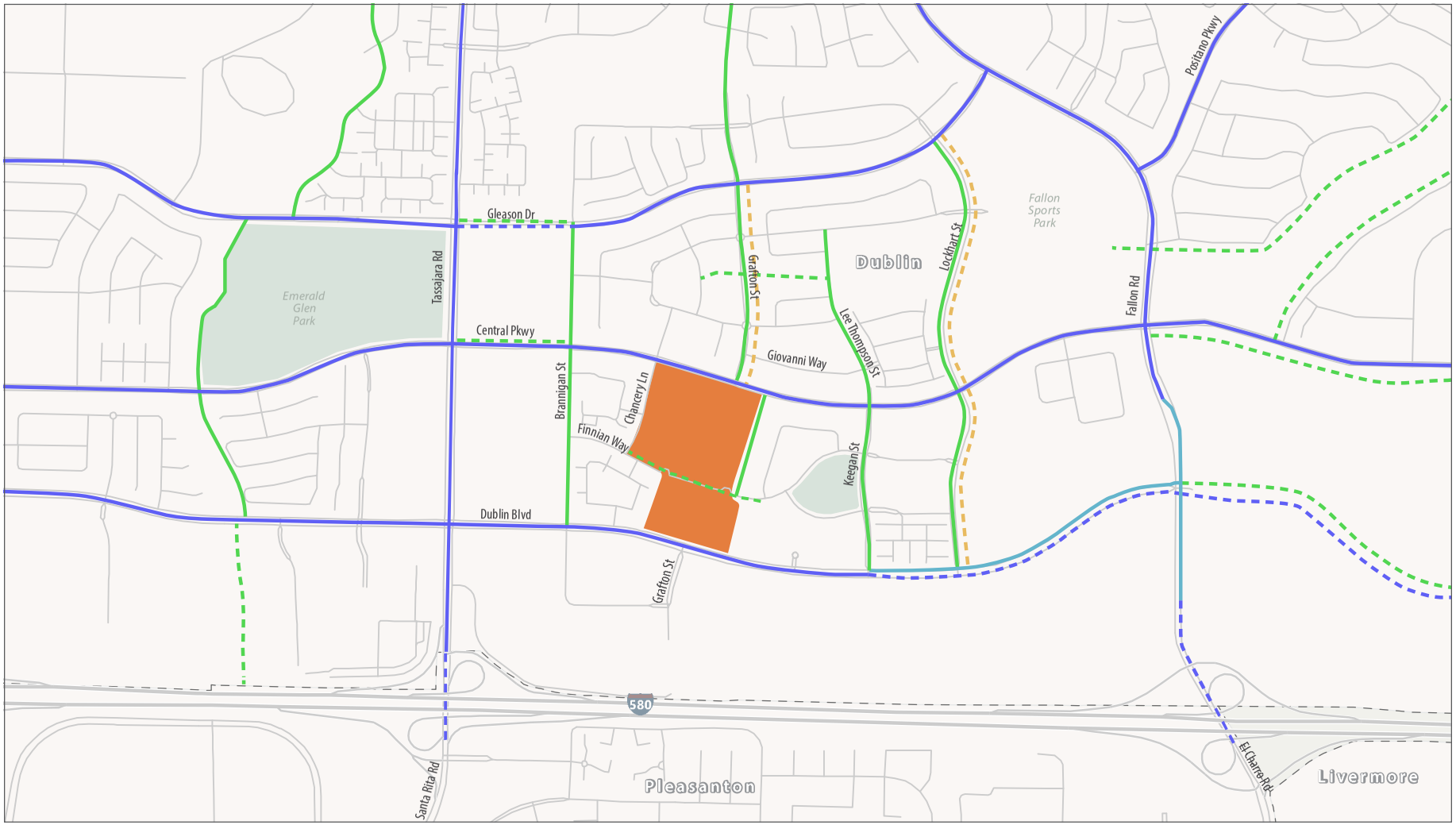
Signalized Intersection with Crosswalks

Signalized Intersection without Crosswalks

Unsignalized Intersection with Crosswalks

Unsignalized Intersection without Crosswalks

Figure 4.15-1
Existing Pedestrian Facilities

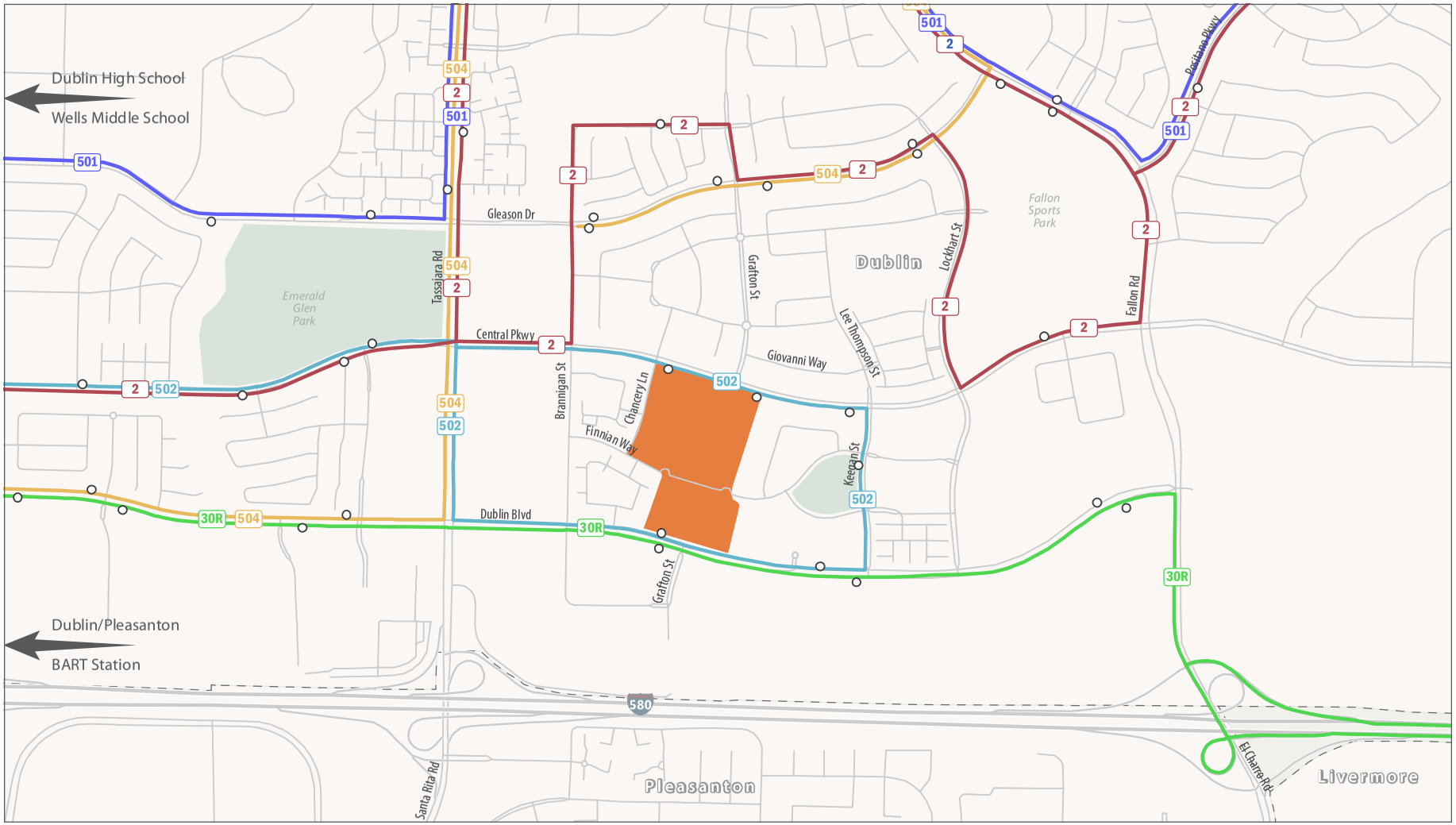


Source: Fehr & Peers, 2020. PlaceWorks, 2020.

Project Site

Existing Bicycle Facility	*Proposed Bicycle Facility*
Class I	Class I
Class II (on both sides of road)	Class II (on both sides of road)
Class II (on one side of road)	Class II (on one side of road)
Class III	Class III

Figure 4.15-2
Existing and Proposed Bicycle Facilities



Source: Fehr & Peers, 2020. PlaceWorks, 2020.

Project Site

Tri-Valley Wheels Bus Route 2

Tri-Valley Wheels Bus Route 30R

Tri-Valley Wheels Bus Route 501

Tri-Valley Wheels Bus Route 502

Tri-Valley Wheels Bus Route 504

Bus Stop

Figure 4.15-3
Existing Bus Routes

4.15.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact regarding transportation and traffic if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1).
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.
5. In combination with past, present and reasonably foreseeable projects, result in significant cumulative impacts with respect to transportation and traffic.

State Regulations

Senate Bill 743

The project would have a significant impact on the environment if it:

1. Causes substantial additional VMT per capita, per service population, or other appropriate efficiency measure. Specifically,
   - For residential projects, a project would cause substantial additional VMT if it exceeds existing regional household VMT per capita minus 15 percent.
   - For office projects, a project would cause substantial additional VMT if it exceeds the existing regional VMT per employee minus 15 percent.
   - For retail projects greater than 80,000 square feet, a project would cause substantial additional VMT if it results in a net increase in citywide total VMT per service population.
2. Conflicts with a plan, ordinance, or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths (except for automobile level of service or other measures of vehicle delay).
3. Substantially induces additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network.

As the proposed project is not residential, office or retail in nature, its effect on total VMT is measured. If the project is found to reduce overall VMT due to its development, it is considered to have a less than significant impact. (CEQA Guidelines, § 15064.3(b)(1).)

Regional Regulations

Alameda County Transportation Commission Congestion Management Program

While Alameda CTC has not adopted thresholds of significance for land use analysis purposes, the ACTC's CMP provides that projects should consider impacts to all types of transportation modes on CMP MTS roadways, as described below:

- Autos: vehicle delay, if required by local jurisdiction, and consistency with adopted plans.
- Transit: effects of vehicle traffic on mixed-flow transit, transit capacity, transit access/egress, need for future transit service, consistency with adopted plans, and Circulation Element needs.
- Bicycles: effects of vehicle traffic on bicyclists conditions, site development, and roadway improvements, and consistency with adopted plans.
- Pedestrians: effects of vehicle traffic on pedestrian conditions, site development, and roadway improvements, and consistency with adopted plans.
- Other impacts and opportunities: noise impacts for projects near state highway facilities and opportunities to clear access improvements for transit-oriented development projects.

Local Regulations

City of Dublin

Impacts to transit, bicycle or pedestrian facilities could be identified if the project conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decreases the performance or safety of such facilities; specifically:

- A pedestrian impact is considered significant if it would:
  - Disrupt existing pedestrian facilities;
  - Interfere with planned pedestrian facilities; or
  - Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.
- A bicycle impact is considered significant if it would:
  - Disrupt existing bicycle facilities;
  - Interfere with planned bicycle facilities;
  - Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards; or
  - Not provide secure and safe bicycle parking in adequate proportion to anticipated demand.
- A transit impact is considered significant if it would result in development that is inaccessible to transit riders or would generate transit demand that cannot be met by existing or planned transit in the area.

- Transportation related impacts could also be identified if:
  - The project substantially increases traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses.
  - The project results in inadequate emergency access.

4.15.3 IMPACT DISCUSSION

TRANS-1	**The proposed Project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including public transit, roadways, bicycle lanes, and pedestrian facilities.**

The project site is located at the southeast corner of the Central Parkway and Chancery Lane intersection, as shown in Figure 3-2 of Chapter 3, Project Description. It is bounded by Chancery Lane to the west, Central Parkway to the north, residences to the east, and Dublin Boulevard to the south. The project proposes to construct a high school on a vacant site that would accommodate approximately 2,545 students. The project site plan is shown on Figure 3-6 of Chapter 3, Project Description.

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. In addition to estimates of daily traffic, estimates are also created for the peak one-hour periods during the weekday morning (7:00-9:00 AM) and the afternoon peak hour of generation. The morning trip generation evaluates the period when traffic volumes on adjacent streets are typically at their highest and the project is expected to generate the most traffic. The afternoon peak hour represents the hour after school when the school generates the most traffic (3:00 to 5:00 PM).

Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition), land use code 530 for High School. Project trip generation estimates are presented in Table 4.15-1. The proposed project is expected to generate approximately 5,170 daily vehicle trips, including approximately 1,323 morning peak hour and 840 afternoon peak hour trips. It should be noted that these trips would not all be net new trips added to the City's roadway network. If the project was not constructed, local area students would travel to alternative high schools, with the existing Dublin High School on Village Parkway receiving the majority. With the proposed project constructed, existing vehicles on the roadway network would then travel to the proposed project rather than the alternative high schools. As the proposed project site is located closer to their place of residence, the development of the project would reduce the overall amount of net vehicle travel. Please see discussion under TRANS-2, below, for additional analysis regarding how development of the proposed project is expected to reduce the total weekday daily VMT by 20,378 vehicle miles.

TABLE 4.15-1 PROJECT VEHICLE TRIP GENERATION

Use	Size	Daily	Weekday AM Peak Hour			Weekday Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
High School	2,545 Students	5,170	887					

Notes: ITE land use category 530 – High School (Adj. Streets, 7-9A,
Weekday AM Peak Hour: Average rate of 0.52; Enter = 67%;
Weekday PM Peak Hour: Average rate of 0.33; Enter = 32%; Exit = 68%
Source: Trip Generation Manual (10th Edition), ITE; Fehr & Peers, 2020.

Minor comment: the In and Out trips to do not add up to the total trips

GOV6-02

A number of special events would be held at the project site throughout the year, including athletic competitions, graduation, and other miscellaneous events. The vehicle trip generation estimates associated with these special events are presented in **Table 4.15-2**. Special event trip rates per attendee were based on an average vehicle occupancy of 2.5, derived from the *Federal Highway Administration Managing Travel for Planned Special Events*, and an assumed mode split of 80 percent of trips traveling using a vehicle. Using this information, the number of vehicle trips (total two-way) were then estimated for an at-capacity event such as a graduation, and other non-capacity events.

TABLE 4.15-2 SPECIAL EVENT VEHICLE TRIP GENERATION

Event	Attendance		
Graduation	4,000		
Football	4,000		
Championship Games	4,000		
Band Competition	4,000	0.64	2,560
Lacrosse	300	0.64	192
Cross Country Meets	500	0.64	320
Soccer Games	300		
Track Meets	500		
Fall Season Practices	150		
Winter Season Practices	150		
Spring Season Practices	150		
Summer Season Practices	150		
School Events	1,000	0.64	640

Source: Fehr & Peers, March 2020.

This assumes 4,000 attendees / 2.5 person occupancy x 0.8 mode split = 1,280 vehicles. 1,280 veh x 2 trips per veh = 2,560 two-way trips. This is a rate of 0.64.

Math checks out.

GOV6-03

Just note that the assumptions above were applied across all events equally. However, some of these events would likely have different trip assumptions. For example, a practice may have fewer trips if the student drives themselves or is already at school and is picked up by a parent.

GOV6-04

Public Transit

As stated above and shown on Figure 4.15-3, Tri-Valley Wheels provides fixed-route transit service in Alameda County, serving the communities of Dublin, Livermore, Pleasanton, and unincorporated portions of the County. Routes 30R, and 502 operate and have stops along the project frontage. Two stops are provided on Central Parkway, one 100 feet east of Chancery Lane and one 180 feet east of Grafton Street, serving route 502. Another bus stop is located on Dublin Boulevard 150 feet west of Grafton Street serving routes 30R and 502. A third bus stop is located across the street from the project on Dublin Boulevard, 220 feet east of Grafton Street for route 30R. Transit amenities are provided at all three bus stops including a shelter and seating. A continuous pedestrian path would be provided from the project site to the transit stops as the project would construct new standard sidewalks along the entirety of the Dublin Boulevard and Central Parkway frontages. The buses used on these routes have a seating capacity of approximately 40 passengers, with standing room available for an additional 20 passengers.

The proposed project would not conflict with any plans, policies, ordinances, or regulations pertaining to public transit and thus no significant adverse impacts related to public transit are anticipated. The proposed project is not expected to result in ridership on the existing Wheels routes that would exceed the available capacity. The existing Wheels school routes are designed to take students from their residences to the existing schools in western and central Dublin and do not serve the project site effectively. Development of the project is expected to result in a decrease in ridership on the existing Wheels routes.

> **Improvement Measure Trans-1.1:** Coordinate with Tri-Valley Wheels to adjust their route structure to accommodate the new high school.

Significance without Mitigation: Less than significant.

Bicycle Facilities

Proposed bicycle infrastructure is identified in the City of Dublin *Bicycle and Pedestrian Master Plan* (Master Plan), 2014. Currently within the project's vicinity, Central Parkway, Dublin Boulevard, Fallon Road, and Gleason Drive provide Class II marked bike lanes. Class I shared-use paths are provided on Grafton Street, Finnian Way and along the eastern project frontage. A number of bicycle facilities are proposed throughout the study area as described earlier and illustrated on Figure 4.15-2. A Tier 2 Class I path is proposed in the City's *Bicycle and Pedestrian Master Plan* on Finnian Way between Chancery Lane and Fitzwilliam Street, extending through the project site. As this connection is not provided, it is considered a *significant* impact.

Significance without Mitigation: Significant.

Impact TRANS-1.2: The project does not include a Class I connection through the project site along the Finnian Way alignment between Chancery Lane and Fitzwilliam Street and is thus inconsistent with the City's *Bicycle and Pedestrian Master Plan*.

> **Mitigation Measure TRANS-1.2:** The applicant shall provide a Tier 2 Class I path through the project site from Chancery Lane to Fitzwilliam Street along the Finnian Way right-of-way.

Significance with Mitigation: Less than Significant.

Figure 4.15-4 illustrates the location of this, and other recommended on-site transportation mitigation measures discussed herein.

No bicycle parking is currently illustrated on the project site plan. Student bicycle parking provisions from the California Green Building Standards Code section 5.106.4.2.1 require permanently anchored bicycle racks with a minimum of four two-bike capacity [illegible] from the California Green Building Standards Co[illegible] permanent, secure bicycle parking spaces per ne[illegible] are required at the project site, with a minimum [illegible] Because the proposed project would not provide [illegible] code requirements, this is considered to be a *significant* impact.

Adequate bicycle paths should also be provided to these bicycle parking locations. It is recommended that the school provide a pedestrian and bicycle circulation plan to show the anticipated flow of each mode.

GOV6-05

Significance without Mitigation: Significant.

Impact TRANS-1.3: The project does not provide sufficient bicycle parking in accordance with current code requirements.

> **Mitigation Measure TRANS-1.3:** Provide at least 90 bicycle parking spaces, with a minimum of 72 student bicycle spaces and a minimum of 18 staff bicycle spaces at the project site. Provide a minimum of two permanent, secure bicycle parking spaces per new building meeting one of the following per the California Green Building Standards Code section 5.106.4.2.2:
>
> - Covered, lockable enclosures with permanently anchored racks for bicycles
> - Lockable bicycle rooms with permanently anchored racks
> - Lockable, permanently anchored bicycle lockers.

Significance with Mitigation: Less than Significant.

The proposed project would not conflict with any plans, policies, ordinances, or regulations pertaining to pedestrian facilities or travel and thus no significant adverse impacts are anticipated.

Significance with Mitigation: Less than Significant.

Parking

Figure 4.15-4

GOV6-06

The proposed project would provide three parking lots, as shown on Figure 4.15-5; lot A would be accessed from Central Parkway and provide 245 parking spaces, 8 of which would be accessible stalls. Parking lot B would be accessed along Chancery Lane and provide 33 parking spaces, 2 of which would be accessible stalls. Parking lot C would be accessed along Dublin Boulevard and provide 149 parking spaces, 6 of which would be accessible stalls. A 135-stall parking structure will also be provided under parking lot C. All proposed parking would be 90-degree angled stalls.

Near the project site, on-street parking is allowed on portions of both sides on Central Parkway, both sides of Chancery Lane, Finnian Way and Grafton Street and not allowed on Dublin Boulevard. No length of stay or time of day restrictions are currently in place for the area's on-street parking.

The City of Dublin Municipal Code Chapter 8.76.080 Parking Requirements by Use Type requires high school developments to provide:

- One parking space per classroom, plus
- One parking space per four students, plus
- 60 lineal feet of street loading area for every 200 students

The proposed project will provide 49 classrooms and have a maximum capacity of approximately 2,545 students, which requires 686 parking spaces and 750 lineal feet of off-street loading. The *ITE Parking Generation Manual, 5th Edition* estimates an average rate of 0.26 parking spaces per student for High Schools, which equates to 662 parking spaces. The site plan provides 559 parking spaces and roughly 770 feet of off-street loading. The amount of proposed parking would not meet City Code Chapter 8.76 requirements or satisfy the anticipated demand for off-street parking. However, as previously noted, the District is exempt from the City's zoning ordinance contained in Title 8 of the City's Municipal Code. The amount of off-street loading space provided meets City standards and is expected to be adequate.

The California Code of Regulations Title 24 requires a minimum of 2 percent of total spaces to be reserved for disabled accessible parking spaces. These spaces shall be located as near as practical to primary accessible entrances.

The amount of proposed off-street parking is not adequate to meet California Code Title 24 requirements or satisfy the anticipated parking demand. While
significant impact on the environment pursuant
the provision of insufficient parking would be ex
available on-street parking on the roadways surr
staff into on-street parking within the surroundi
relative to pedestrian activity and the loss of on-

Will there be any enforcement the school will implement to minimize the amount of overflow parking within the surrounding neighborhood?

Many other high school manage parking by having parking permits and policy which designates where staff/ student are allowed to park and procedure to handle complains from neighbors.

GOV6-07

Roadways

The CMP indicates that ACTC shall take actions to encourage, supplement, and support transportation demand management (TDM) efforts to assess, monitor, and improve the performance of the county's multimodal transportation system, address congestion, and ultimately protect the environment with strategies to help reduce greenhouse gas emissions.

Designated CMP MTS roadways within the study area include:

- I-580 from west of Hacienda Drive to Airway Boulevard
- Fallon Road from I-580 Ramps to Tassajara Road
- Tassajara Road from I-580 Ramps to S Dublin Ranch Road
- Dublin Boulevard from Tassajara Road to Fallon Road

TRANSPORTATION & TRAFFIC

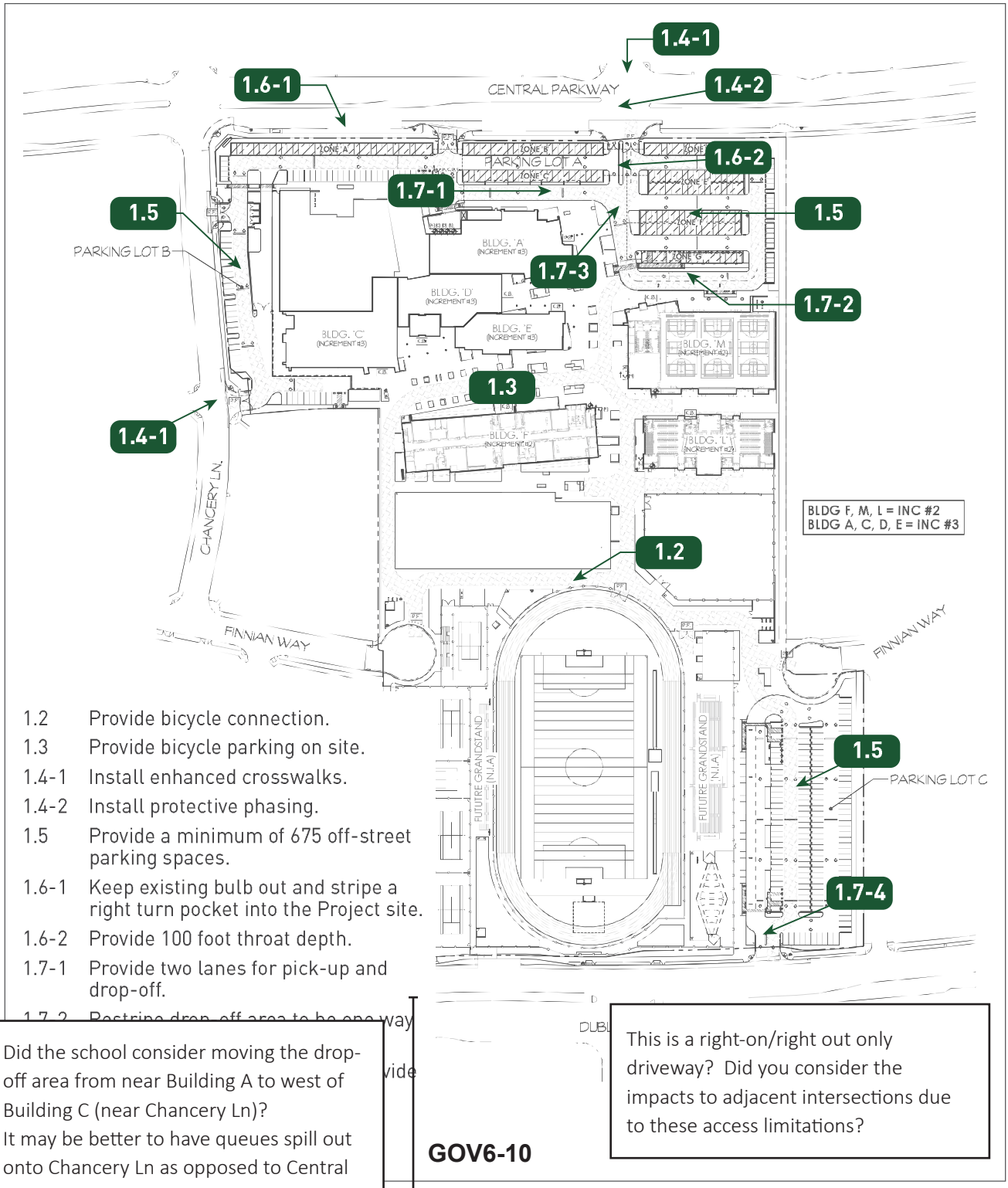
ACTC has not adopted thresholds of significance
consideration of impacts. Project effects on auto
expected to impact the performance of regional
project would result in an overall decrease in vel
underserved area. As shown on Table 4.15-3, be
students would travel farther, with fewer walk ar
overall effect of the project on the regional MTS

The proposed project would not conflict with an
the roadway system and thus no significant adve

Significance without Mitigation: Less than Significant.

I do not necessarily agree with this statement if you evaluate each MTS roadway individually. Yes, overall there may be a decrease in traffic levels due to shorter trip lengths, however, there may be added trips on certain roadways due to this school. For example, if a student lived to the west of Tassajara Road and currently goes to Dublin High, they would travel westward on Dublin Blvd or I-580 or another east/west arterial. However, with the new school, they would travel eastward and therefore Dublin Blvd or Central Parkway to the east of Tassajara Road would see an increase in vehicles.

GOV6-08



1.2 Provide bicycle connection.
1.3 Provide bicycle parking on site.
1.4-1 Install enhanced crosswalks.
1.4-2 Install protective phasing.
1.5 Provide a minimum of 675 off-street parking spaces.
1.6-1 Keep existing bulb out and stripe a right turn pocket into the Project site.
1.6-2 Provide 100 foot throat depth.
1.7-1 Provide two lanes for pick-up and drop-off.
1.7-2 Restripe drop-off area to be one way wide

Did the school consider moving the drop-off area from near Building A to west of Building C (near Chancery Ln)?
It may be better to have queues spill out onto Chancery Ln as opposed to Central Parkway since it is a local neighborhood street and would not conflict with bicyclists and buses.

GOV6-10

This is a right-on/right out only driveway? Did you consider the impacts to adjacent intersections due to these access limitations?

GOV6-09

Figure 4.15-4
Project Site Plan Recommendations

TRANS-2 The proposed Project would not conflict with CEQA Guidelines Section 15064.3, subdivision (b).

Vehicle Miles Traveled (VMT)

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Drive guidelines were developed in August 2014, with updated draft guidelines prepared January 2016, which incorporated public comments from the August 2014 guidelines. OPR released final proposed Guidelines on November 27, 2017. The final proposed Guidelines include a new Section 15064.3, which establishes VMT as the most appropriate measure of transportation impacts in land use projects. OPR also released a Technical Advisory on Evaluating Transportation Impacts in CEQA. New Guidelines section 15064.3 states that they do not take effect until July 1, 2020 unless the lead agency adopts them earlier. As neither the City of Dublin nor the Alameda CTC has established standards or thresholds regarding VMT, the project's total effects on VMT have been calculated.

Analysis, Methods & Results

To estimate the project's effects on vehicle miles of travel, the total VMT without and with the project was calculated. Using the locations of student addresses shown on Figure 4.15-5, student trip lengths to the new proposed high school location and the existing Dublin High School were calculated. Employee trip lengths to both high school locations were estimated to be approximately the same and consistent with employee trip lengths in this area of the City and County. The estimate of project generated VMT is summarized in Table 4.15-3. The expected total weekday daily VMT associated with the proposed project site is approximately 15,858 vehicle miles. If the proposed project were not to be constructed, area students would need to attend another school, such as the existing Dublin High School, or another location further from their residence. To be conservative, all students were assumed to attend the existing Dublin High School in the absence of project development. For project students, the total average trip length to the new high school was calculated to be 1.7 miles, with their trip length to the existing Dublin High School being 5.9 miles. The total weekday daily VMT associated with students attending the existing high school is approximately 36,614 vehicle miles. Thus, development of the proposed project is expected to reduce the total weekday daily VMT by 20,756 vehicle miles.

TABLE 4.15-3 PROJECT EFFECT - VEHICLE MILES OF TRAVEL

	Daily Trip Generation	Average Trip	Daily Vehicle Miles
Proposed Project (Promenade High School)	4,942 student trips	Where do the employee trip lengths come from? The City model?	
	228 employee trips		
Proposed Project Total	**5,170 Trips**		
Existing Dublin High School	4,942 trips	5.9 miles/trip	29,158 vehicle miles
	228 employee trips	32.7 miles/trip	7,456 vehicle miles
Existing DHS Total	**5,170 Trips**	**-**	**36,614 vehicle miles**
Total Project Effect on VMT (Project – Existing)			**(20,756) vehicle miles**

Source: Fehr & Peers, March 2020.

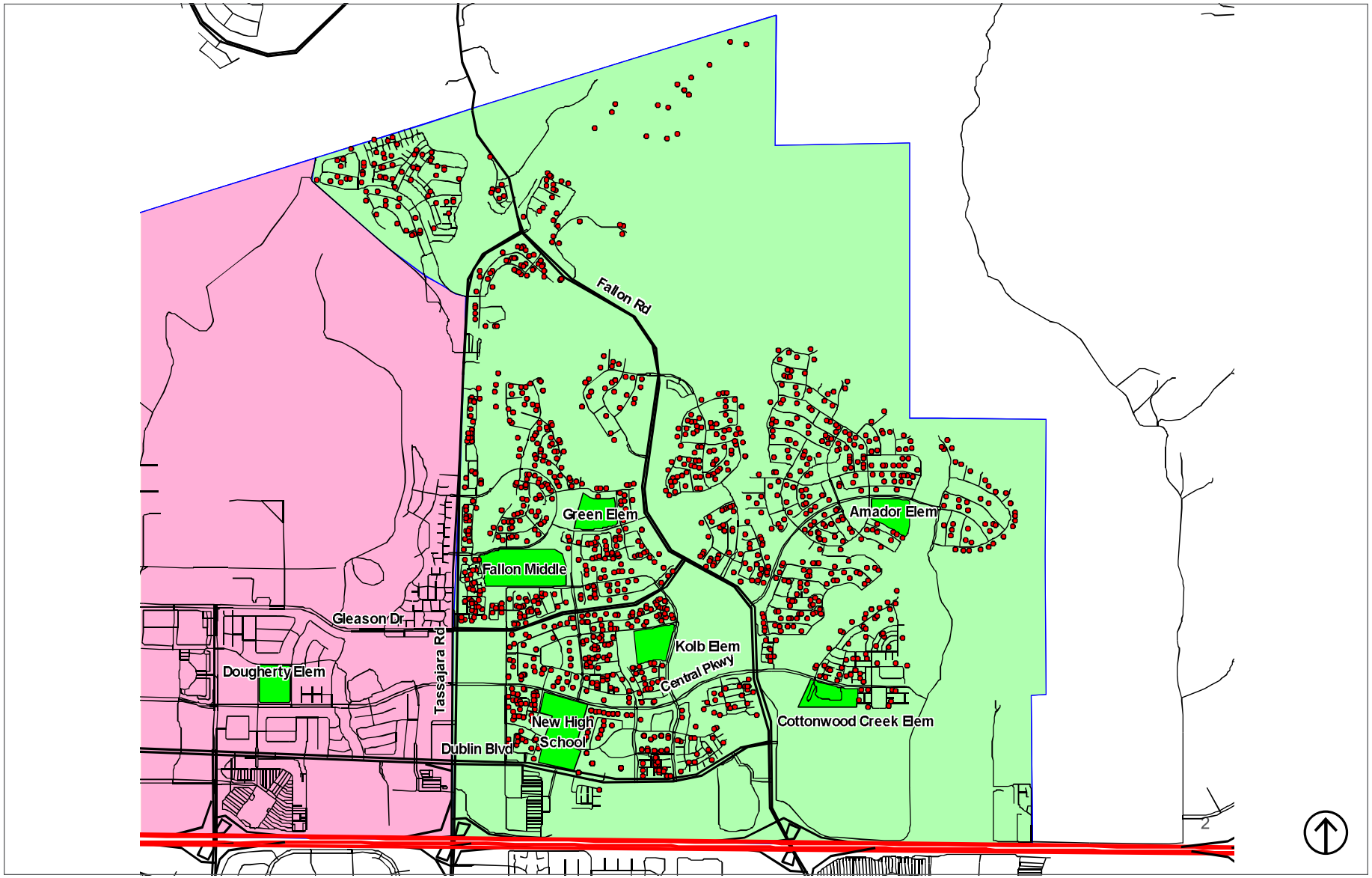
GOV6-11

The average project trip length compared to the average trip lengths for school-based trips in Alameda County and the Tri-Valley area compiled from the California Household Travel Survey (*2010-2012 California Household Travel Survey, Final Report*, June 2013, California Department of Transportation), is summarized below:

- Proposed Project High School Students – 1.7 miles
- Alameda County Average – 2.7 miles
- Tri-Valley (Dublin/Pleasanton/Livermore) – 2.0 miles

The expected trip length for project students is less than the average trip length of school-based student trips within Alameda County, and the Tri-Valley area. The proposed project would reduce total VMT by approximately 20,800 miles per day.

Significance without Mitigation: Less than Significant



Source: Fehr & Peers, 2020. PlaceWorks, 2020.

Figure 4.15-5

Estimated Distribution of Future Comprehensive Dublin High School Students

TRANS -3	**The proposed Project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

Pedestrian Facilities

The project site is located within a City-designated Enhanced Pedestrian Area. An Enhanced Pedestrian Area is designated to encourage pedestrians to walk to their destination rather than using their car for trips within the area. The purpose of the Enhanced Pedestrian Area designation is to ensure that development within the area is designed to encourage pedestrian trips. The proposed project is a school use and, in conjunction with the Safe Routes to School program, encourages walking to the site.

Existing pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals as shown on Figure 4.15-1. As part of the project, new City standard sidewalks and corner ADA compliant curb ramps would be provided on all roadways abutting the project site. The amount of pedestrian activity on site area sidewalks and crosswalks will substantially grow as a result of the project, increasing the potential for vehicle and pedestrian conflicts, potentially causing a *significant* impact.

Significance without Mitigation: Potentially Significant.

Impact TRANS-3.1: The increase of pedestrian activity increases the potential for vehicle and pedestrian conflicts.

> Mitigation Measure TRANS-3.1a: The project shall install enhanced school crosswalks at Central Parkway and Grafton Street as well as Chancery Lane and Dunmore Lane.
>
> Mitigation Measure TRANS-3.1b: The project shall install northbound and southbound protective left-turn phasing at the signalized intersection of Central Parkway and Grafton Street to reduce the potential for pedestrian and vehicle conflict.

Significance with Mitigation: Less than Significant.

Site Circulation

Vehicular access to the project site is proposed to be provided via five access points, including:

- Intersection of Grafton Street and Central Parkway (signalized)
- Intersection of Chancery Lane and Dunmore Lane (unsignalized)
- Driveway on Chancery approximately 280 feet north of Dunmore Lane
- Driveway on Central Parkway approximately 335 feet east of Chancery Lane
- Driveway on Dublin Boulevard approximately 220 feet east of Grafton Street

Additional emergency vehicle access points to the site are included on Finnian Way from the west and east.

The posted speed limit is 35 miles per hour on Central Parkway, 25 miles per hour on Chancery Lane and 45 miles per hour on Dublin Boulevard. Table 201.1 of the Caltrans Highway Design Manual (HDM) states that the stopping sight distance standard for a design speed of 45 miles per hour is 360 feet, 250 feet for 35 miles per hour and 150 feet for 25 miles per hour. Adequate sight distance appears to be provided at all new driveway locations proposed by the project. However, as the project's design is finalized, these distances should be checked, and the project should propose no features (signs, landscaping, etc.) that would compromise driveway sight distance resulting in a *significant* impact.

Significance without Mitigation: Potentially Significant

Impact TRANS-3.2: The proposed design may compromise driveway sight distance.

> **Mitigation Measure TRANS-3.2:** The final site plan for the project will be analyzed by the project's Civil Engineer to ensure that adequate sight distance is maintained at all driveways. No objects (landscaping, monument signs, etc.) greater than three feet in height will be allowed within the sight distance triangles at driveway intersections. The project's Civil Engineer will review available speed survey information from the City and adjust required sight distance if required in order to comply with applicable sight distance standards.

Significance with Mitigation: Less than Significant

At the project driveway located on Dublin Boulevard, vehicles exiting the site wanting to travel east on Dublin Boulevard may attempt to cross multiple lanes of traffic in a short distance to use the westbound left turn lane at Dublin Boulevard and Grafton Street. This would be a potentially unsafe movement that could cause a *significant* impact and should be prohibited.

Significance without Mitigation: Potentially Sign

Impact TRANS-3.3: The proposed design may ca
project driveway located on Dublin Boulevard.

> **Mitigation Measure TRANS-3.3:** Provide boll
> at Dublin Boulevard and Grafton Street to deter vehicles exiting the site to cross multiple lanes of traffic.

Significance with Mitigation: Less than Significar

Three unloading zones are proposed on-site, pr
loading zones would be provided in the norther
parking lot. In the northern parking lot, vehicles traveling to the northern side of the site would primarily use the full access driveway at the intersection of Central Parkway and Grafton Street, and the right in right out driveway located
Building A would enter at
Parkway and Grafton Stree
the driveway located at Ce

This driveway location is not ideal. Entering vehicles would likely be coming from the west so they would need to make an eastbound U-turn at Dublin Blvd/Carnmore Place. The residents at The Terraces at Dublin Ranch may not like the added traffic for this movement. **GOV6-12**

It would be very helpful if a figure is provided to show traffic flow throughout the site, particularly how the two northern loading areas will interact with each other and the parking areas in the northeast portion of the site. **GOV6-13**

Another suggestion to reduce the amount of vehicle conflict at the internal intersection between Building A and Building M drop-off is to relocate the Building A drop-off to Zone A. Vehicles could enter from the southwest driveway on Chancery Lane and then exit the unsignalized driveway on Central Parkway. This would separate the vehicle circulation for the two drop-off areas. **GOV6-14**

drop off area would enter and exit the site using the right in, right out driveway located on Dublin Boulevard 220 feet east of Grafton Street.

On Central Parkway, the existing bulb out near the western bus stop is proposed to be moved to the first proposed driveway east of Chancery Lane as a part of the project. The project proposed large pull out area would likely be used as a drop off and pick up zone. Loading and unloading activities in this area would create additional conflicts areas with heavy flows of vehicle, bicycle, and pedestrian traffic in this area causing a potential *significant* impact

Significance without Mitig

Impact TRANS-3.4: The pr
used as a drop off and pic
conflicts areas with heavy

Mitigation Measu
bus stop in its cur
turn pocket on Ce

Are there no impacts due to potential queues spilling onto Central Parkway?

I can see the Building A queue easily spilling onto Central Parkway due to the short throat length at the driveway and having to deal with traffic leaving the Building M drop-off area.

As mentioned on Figure 15.4, it would be better if the loading area is relocated to the western portion of the site or at least have the Building A traffic enter from Chancery Ln driveway.

GOV6-15

Significance with Mitigation: Less than Significant.

One of the main project a
Street. Insufficient clear th
conflict with heavy flows o
outer edge of the traveled
conflicting vehicular traffic
entering or exiting a site. T

Are you suggesting that loading and unloading activities remain on Central Pkwy? Even with the proposed mitigation to leave the bulbout at its existing location, there is still potential for vehicles to use this area as a loading/ unloading area. This could lead to vehicles blocking the intersection of Central Pkwy/Chancery Ln. Vehicles would also likely block the bike lane on the south side of Central Pkwy.

GOV6-16

Significance without Mitig

Impact TRANS-3.5: The proposed design has Insufficient clear throat depth, for vehicles exiting the project site at this location could potentially conflict with heavy flows of vehicle, bicycle, and pedestrian traffic.

Mitigation Measure TRANS-3.5: Modify the proposed design at Central Parkway and Grafton Street to provide a minimum throat depth of 100 feet (approximately four vehicles) for vehicles entering and exiting the site.

Significance with Mitigation: Less than Significant.

Several circulation areas within the project site pose the potential for conflicts between vehicles, pedestrians and bicycles, potentially causing a safety hazard and a potential *significant* impact.

Significance without Mitigation: Potentially Significant.

Impact TRANS-3.6: Several circulation areas within the project site pose the potential for conflicts between vehicles, pedestrians and bicycles, potentially causing a safety hazard.

Mitigation TRANS-3.6a: A loading and unloading area with one lane is proposed just north of Building A. To provide for safe and efficient access, the project shall stripe the drop-off area to include two lanes, with one lane dedicated and striped for drop-off and pick-up, and one lane dedicated for passing.

Mitigation TRANS-3.6b: A bi-directional loading and unloading area is proposed just north of the Gymnasium Building M
be one way with two l

I think a "Keep Clear" should be paved in this intersection to ensure that the queue from the Building M drop-off area does not block the intersection and prevent vehicles leaving the Building A drop-off area from leaving the site.

GOV6-17

Mitigation TRANS-3.6c
Grafton Street project
provides for an angled off-set intersection. To provide for safe and efficient on-site circulation, the project shall reconfigure and realign this intersection to align with the project driveway and implement side-street
Under this type of inte

To limit queuing onto Dublin Boulevard, it may be recommended that vehicles go to the easternmost drive aisle first and also remove the parking spaces on the southern edge of the parking lot. The idea is to limit the number of occurrences that a vehicle is entering or leaving a parking space near this driveway that would result in vehicles queuing into Dublin Blvd while waiting for this maneuver to be completed.

GOV6-18

Mitigation TRANS-3.6d
driveway that the proj
for vehicles, pedestria
adjacent to the furthe
island just north of the
and unloading area to travel counterclockwise around the southerly parking lot.

Significance with Mitigatio

Should an on-site queuing analysis be completed to ensure that there is enough on-site storage to handle the queuing from the drop-off and pick-up areas? Queuing onto adjacent roadways may lead to unsafe conditions.

GOV6-19

TRANS-4	**The pr** **acces**

The project would entail construction of a new school which would not physically interfere with emergency response or evacuation plans once fully constructed, either to the new high school or to the surrounding residential and commercial development. During operation of the school, the existing layout of roadways in the vicinity of the proposed project would be as shown on the site plan. As reflected on the project's conceptual site plan, the project is in compliance with local emergency vehicle access standards and regulations. The connection of the school to the City of Dublin streetways would occur from Dublin Boulevard to the south, Central Parkway to the north and Finnian Way to the east and west.

During construction, roadway modifications would occur on Dublin Boulevard and Central Parkway in the vicinity of the proposed project to allow access to residential areas and commercial areas by emergency vehicles. These modifications could require temporary roadway closures and detouring, which would be accounted for through the preparation of a traffic management plan (TMP). All relevant emergency services would be notified of and provided with the TMP, thereby, avoiding interference with adopted emergency plans or emergency evacuation plans. Without a TMP this may cause a *significant* impact.

Significance Without Mitigation: Potentially Significant.

Impact TRANS-4: The proposed project would result in temporary modifications to Dublin Boulevard and Central Parkway during construction which may interfere with emergency vehicle response times and routes.

Mitigation Measure TRANS-4: Preparation of a traffic management plan (TMP), which would:

- Provide notice to relevant emergency services, thereby avoiding interference with adopted emergency plans, emergency vehicle access, or emergency evacuation plans.
- Identify locations of staging areas, construction worker parking, and off-site parking staging areas, as necessary.
- Provide a point of contact for City of Dublin residents to obtain construction information, have questions answered, and convey complaints, as related to construction impacts to traffic.
- Identify the traffic controls and methods proposed during each phase of the project construction and the provision of safe and adequate access for vehicles, transit, bicycles, and pedestrians. Traffic controls and methods employed during construction shall be in accordance with City of Dublin standards and the requirements of the Manual of Uniform Traffic Control Devices (FHWA, 2009 MUTCD with Revisions 1 and 2, May 2012). The TMP shall identify safe access points, routes of travel and other means of access and circulation.
- Maintain bicycle and pedestrian access along the project frontage on the east-west thoroughfare on Dublin Boulevard and Central Parkway during construction, when feasible. When infeasible, provide appropriate pedestrian and bicycle detours with adequate signing and striping.

Significance with Mitigation: Less than Significant

The project site plan shows a total of seven access points for emergency vehicles along the street network including two on Finnian Way, two on Central Parkway, two on Chancery Lane and one on Dublin Boulevard. Additional access points located within the proposed site are located in the parking lots with one in the northern parking lot and one in the southern parking lot. Several factors determine whether a project has sufficient access for emergency vehicles, including:

- Number of access points (both public and emergency access only)
- Width of access points
- Width of internal roadways

Internal roadways and access points on the conceptual project site appear to have sufficient width to accommodate emergency vehicles. However, as the site plan is finalized, adequate and safe emergency vehicle access should be confirmed.

Improvement Measure TRANS-4.1: The final site plan shall be reviewed and approved by the Fire Marshal to ensure adequate emergency vehicle access.

TRANS-5	The proposed project, in combination with past, present and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to transportation and traffic.

The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to transportation and traffic. The proposed project would result in an incremental cumulative decrease in Vehicle Miles of Travel of approximately 20,800 vehicle miles per day on the area's roadway network. With respect to public transit facilities, development of the proposed project would result in a cumulative decrease in ridership on existing transit lines, which is not considered to be a significant adverse impact. The project's incremental contributions to area pedestrian and bicycle travel would not be cumulatively considerable and would not result in significant cumulative adverse impacts.

Significance without Mitigation: Less than Significant

dusdceqa Unknown <dusdceqa@dublinusd.org>

New Comprehensive Dublin High School Project EIR

Jenni Masse <jenni.masse@gmail.com> Thu, Jul 23, 2020 at 4:57 AM
To: dusdceqa@dublinusd.org
Cc: cherrierdan@dublinusd.org, rousemegan@dublinusd.org, milleramy@dublinusd.org, blackmangabi@dublinusd.org, moiraodaniel@dublinusd.org, bustosvicki@dublinusd.org

Hello Chris and DUSD Board Members,

I am excited to hear of the plans to break ground on the new Dublin high school!

I was at all of the preliminary meetings at Fallon middle school where we discussed the design for the new campus. The original plan was to have the entrance on the other side (Dublin Blvd). Which seemed to make much more sense. **PUB1-01**

I live on Central Parkway and am deeply concerned with the safety of the current plan to make the main entrance of the new high school on Central Parkway. Central Parkway is a smaller street with substantial residential housing. There are many bikers and pedestrians including small children on Central Parkway who would be at risk due to such a heavy flow of traffic from the new school. Also, the traffic would greatly increase all around the neighboring streets which would create a lot of congestion for the community.

Changing back to the original plan proposed by the architect and putting the entrance on Dublin Boulevard could greatly reduce this safety concern for residents and students. It could also significantly reduce congestion of neighboring streets.

Dublin Boulevard is a main road, built to handle more traffic and would allow cars accessing the high school to flow more freely. Putting the main entrance on Dublin Boulevard would also reduce safety hazards and residential stress.

When I attended the meetings I was increasingly frustrated to hear the arguments for putting the entrance on Central Parkway came from people who admitted they were not familiar with the streets. The arguments for changing the design also had nothing to do with the safety and well being of the surrounding community. Even the architect agreed that putting the entrance on a main road like Dublin Boulevard would make more sense. **PUB1-02**

I ask that you please consider observing the streets that are being considered and researching the area before putting the entrance on Central Parkway. Please make an educated decision that protects the safety and well being of the surrounding community and reduces the impact on traffic for the neighborhood streets. **PUB1-03**

Thank you in advance for your consideration!
Sincerely,
Jenni Masse

dusdceqa Unknown <dusdceqa@dublinusd.org>

New Comprehensive High School Project in Dublin, California.

1 message

kmarleau@gmail.com <kmarleau@gmail.com> Mon, Aug 3, 2020 at 1:41 PM
To: dusdceqa@dublinusd.org

---------- Forwarded message ---------
From: <kmarleau@gmail.com>
Date: Tue, Jul 21, 2020 at 7:19 PM
Subject: Item F-3: Draft EIR for 2nd High School
To: <boardcomments@dublinusd.org>
Cc: <cherrierdan@dublinusd.org>, <rousemegan@dublinusd.org>, <milleramy@dublinusd.org>, <blackmangabi@dublinusd.org>, <kuocatherine@dublinusd.org>, <moiraodaniel@dublinusd.org>

Dear Board of Trustees,

Regarding the Draft EIR, I would like to see a study of an alternative where the site plan has most of the parking situated on Dublin Blvd instead of the alternative studied where all traffic must travel from Dublin Blvd through to Central Parkway, which significantly affects traffic on both roads. At the Community Workshop in the Fallon MPR in March 2019, the site plan showed a configuration with the main parking lot on Dublin Blvd, but then the plans were changed to put the main parking areas on Central Parkway. I believe that Trustee Blackman was part of the Educational Specification Design team that suggested this change to the plans and can perhaps provide some insight about the reason. **PUB2-01**

For the final EIR, I would encourage studying what the traffic impact would be if the parking were mainly on Dublin Blvd since the current design shows a significant impact from traffic noise to the neighbors along Central Parkway. Dublin Blvd is already a road designed to accommodate large volumes of traffic and allows for non-school traffic to flow around school traffic with more than one lane in each direction. **PUB2-02**

For the safety of students traveling to school by bike, on foot, or by public transportation, I would encourage you to keep private car traffic away from Central Parkway, which is currently a relatively safe bike route, and make the school only accessible to pedestrian and bicycle traffic on the Central Parkway side. **PUB2-03**

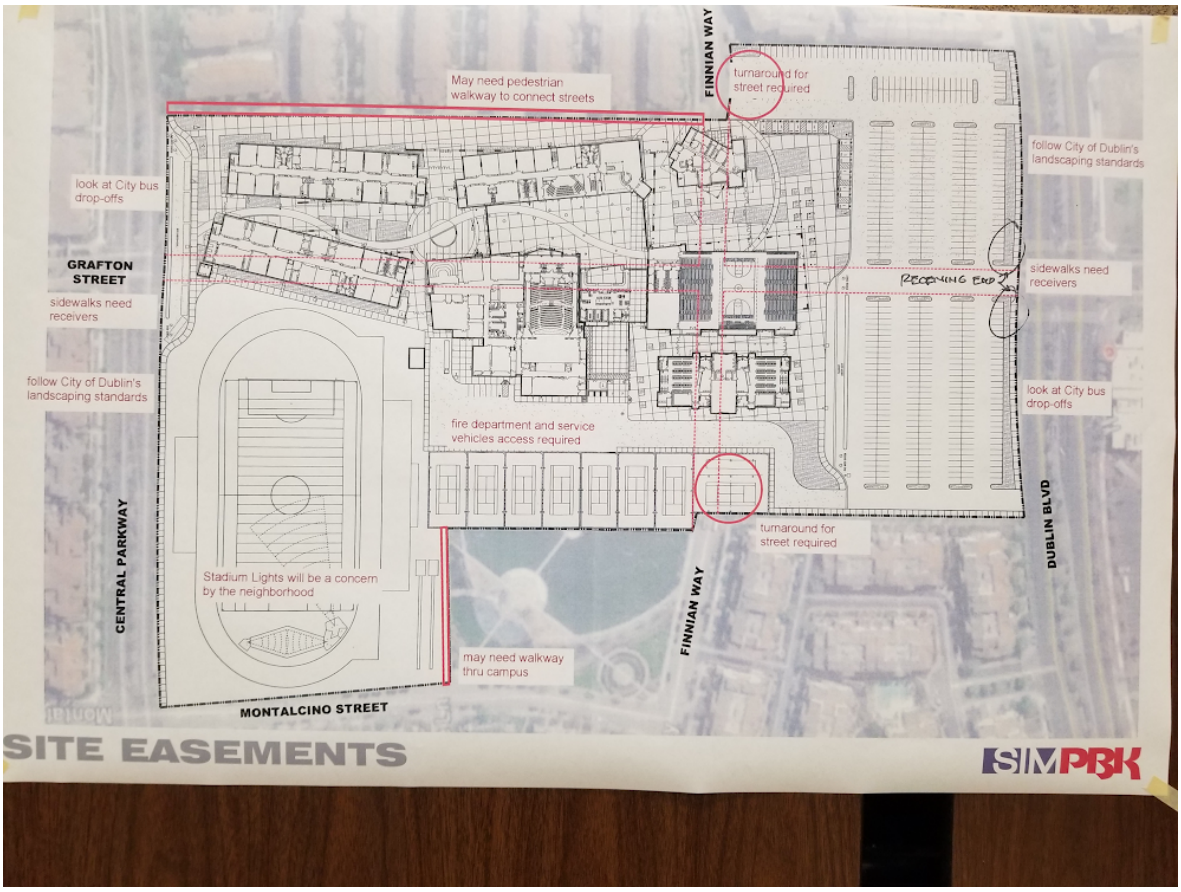
Please study the environmental impact of putting the parking, as originally proposed in the first meetings with the public, on Dublin Blvd for the final EIR to see if that would be a viable alternative to the current site plan. **PUB2-04**

Also, Fallon Middle School currently has 117 bike parking spaces and is full almost every day, 72 bike parking spots may not be enough. **PUB2-05**

Thank you,

Kristi Marleau

Original plan presented in March 2019


SITE EASEMENTS
SIMPBK
GRAFTON STREET
CENTRAL PARKWAY
MONTALCINO STREET
FINNIAN WAY
DUBLIN BLVD
May need pedestrian walkway to connect streets
turnaround for street required
follow City of Dublin's landscaping standards
look at City bus drop-offs
sidewalks need receivers
fire department and service vehicles access required
Stadium Lights will be a concern by the neighborhood
may need walkway thru campus
RECEIVING END

PUB2-06

dusdceqa Unknown <dusdceqa@dublinusd.org>

New Comprehensive High School Project in Dublin, California

1 message

DAN ANDERSON <dsjmanderson@comcast.net> Mon, Jun 29, 2020 at 9:47 PM
To: "dusdceqa@dublinusd.org" <dusdceqa@dublinusd.org>

I live in the Sorrento neighborhood close to where this second High School is proposed. I have read the EIR and was generally impressed with the majority of mitigation comments for the identified issues with the exception of one area: TRAFFIC. **PUB3-01**

Here are my concerns:

-The site plan rendering shows Central Parkway between Chancery Lane and Grafton Street with 2 lanes of traffic in each direction with a landscaped center divide. This portion of roadway currently has only 1 lane of traffic in each direction with the landscaped center divide and a small shoulder in each direction that is currently used for parallel parking. If Central Parkway is expanded to 2 lanes in each direction as shown it will likely mean the elimination of parking on both sides of Central Parkway (eastbound and westbound) as well as potentially shrinking or eliminating the center divide as there is just insufficient space for all elements (not to mention bicycle lanes and the 2 school site entry driveways off of Central Parkway).

In addition, similar/matching modifications would likely have to be made for additional portions of Central Parkway, specifically the portions of roadway between Chancery Lane and Brannigan Street and between Brannigan Street and Tassajara Road in both directions. **PUB3-02**

Since Central Parkway would be the only way to directly access the northern portion of the school, I am also very concerned with emergency vehicle access from that direction, especially at high traffic times. **PUB3-03**

-The area dedicated to 'Parking Lot B' near Chancery Lane is currently a dirt strip (part of the school site parcel) that is used as overflow parking for residents to the west on Chancery Lane. This is in addition to parallel street parking on the east side of Chancery Lane. Both of these areas are completely full at night (curbside parking remains full all daytime) as there is insufficient resident parking in the complex on the west side of Chancery Lane. These cars would have few alternatives as parking areas on Central Parkway and nearby Montalcino Way are generally full all day as well.

In addition, the dead end of Finnian Way is used in a similar manner with overflow parking up on the dirt shoulders and cars parking head on into the court.

For most high schools, students utilize available street parking in the neighborhoods surrounding their schools depending on what type of student parking is allowed on campus (availability, cost, closeness to classes/activities), but I am afraid this north end of the school has literally no such resources available to students since the currently used parking will be diminishing under this plan. **PUB3-04**

-The proposed entry/exit driveway on Chancery Lane just south of Central Parkway is within short distance of the traffic light at Chancery/Central Parkway. This would likely create traffic gridlock on Central Parkway when arriving to the school and a backup onto Chancery Lane when exiting. Upon arriving to the school, especially if there is no drop off zone on Central Parkway, drivers would likely **PUB3-05**

block the intersection when their traffic signal has expired and create difficulty for area residents who are not going specifically to the school. Likewise, the short distance on Chancery Lane to the intersection would likely allow only a few cars onto the street surface before forcing a backup into the parking lot, especially if parallel street parking on the east side of Chancery Lane is retained which will make Chancery extremely narrow for such activity.

PUB3-05 cont.

Thank you for your consideration,
Dan Anderson
3578 Capoterra Way

From: Sean Anayah
To: Sean Anayah
Subject: FW: July 21 Board meeting - comments on the Public Hearing for the Draft EIR - 2nd Comprehensive High School
Date: Monday, August 31, 2020 4:19:06 PM

---------- Forwarded message ---------
From: **Sarah Lopez** <lopezsarah@dublinusd.org>
Date: Mon, Aug 31, 2020 at 3:09 PM
Subject: Re: July 21 Board meeting - comments on the Public Hearing for the Draft EIR - 2nd Comprehensive High School
To: Patricia Benavidez <benavidezpatricia@dublinusd.org>
Cc: Charles Dehnert <dehnertcharles@dublinusd.org>

Hi Patty,

Not a problem! Here they are:

F.3 - BUSINESS SERVICES - Public Hearing regarding the Draft Environmental Impact Report (DEIR) for the 2nd Comprehensive High School Project

1. **Ramya Ramakrishnan** - Dear DUSD Board of Trustees, superintendent Moirao and staff, As one of the three community members who attended the DEIR meeting at Fallon Middle school, I want to highlight that parking was the biggest issue that was highlighted by the other two community members who live in the neighborhood of the Promenade site. Please plan for adequate parking during construction and plan for sufficient parking spots for later when the school will have more kids and school staff resulting from phase 2 completion. The other issue is traffic. This site is sandwiched between 2 main streets so additional traffic coming from all sides is going to be inevitable. We need to think of creative ways to reduce traffic in this area and make safety a priority for the students and teachers. Hope the district leaders can work with our mayor and city council team to work on solutions that mitigate traffic. When can the community expect ground breaking to happen? Please provide more information on the status since we are exactly two years away from making this much awaited school a reality. Thank you. Best Regards.

   COM1-01
   COM1-02
   COM1-03

2. **Kristi Marleau** - Dear Board of Trustees, Regarding the Draft EIR, I would like to see a study of an alternative where the site plan has most of the parking situated on Dublin Blvd instead of the alternative studied where all traffic must travel from Dublin Blvd through to Central Parkway, which significantly affects traffic on both roads. At the Community Workshop in the Fallon MPR in March 2019, the site plan showed a configuration with the main parking lot on Dublin Blvd, but then the plans were changed to put the main parking areas on Central Parkway. I believe that Trustee Blackman was part of the Educational Specification Design team that suggested this change to the plans and can perhaps provide some insight about the reason. For the final EIR, I would encourage studying what the traffic impact would be if the parking were mainly on Dublin Blvd since the current design shows a significant impact from traffic

   COM2-01
   COM2-02

noise to the neighbors along Central Parkway. Dublin Blvd is already a road designed to accommodate large volumes of traffic and allows for non-school traffic to flow around school traffic with more than one lane in each direction. For the safety of students traveling to school by bike, on foot, or by public transportation, I would encourage you to keep private car traffic away from Central Parkway, which is currently a relatively safe bike route, and make the school only accessible to pedestrian and bicycle traffic on the Central Parkway side. Please study the environmental impact of putting the parking, as originally proposed in the first meetings with the public, on Dublin Blvd for the final EIR to see if that would be a viable alternative to the current site plan. Also, Fallon Middle School currently has 117 bike parking spaces and is full almost every day, 72 bike parking spots may not be enough. Thank you.

COM2-02 cont.

COM2-03

COM2-04

COM2-05

Sarah Lopez
Dublin Unified School District
Director of Communication and Community Engagement
p: 925-828-2551 x8086
m: 925-557-6531
lopezsarah@dublinusd.org
Education That Inspires Lifelong Learning

In Office: M/W & F every other week | Working Remotely: T/TH
Road to Reopening Playbook | COVID-19 Resources | DUSD Weekly Updates

On Mon, Aug 31, 2020 at 3:04 PM Patricia Benavidez <benavidezpatricia@dublinusd.org> wrote:

> Good afternoon,
>
> Could you please send me a copy of the complete text of the two comments submitted on the subject item? They need to be forwarded to the CEQA consultant for inclusion in the Final EIR. If you could send them to me this today that would be great, or tomorrow morning at the absolute latest.
>
> Thank you!
> Patty
>
> ***~During the COVID-19 Shelter in Place I will be working remotely until further notice. I will be available during my normal office hours from 9:00 am to 5:30 pm, Monday - Friday. Thank you for your patience as we navigate the current circumstances. Stay well and please do your part to help stop the spread of COVID-19.~***
>
> ***Patty Benavidez***
> **Dublin Unified School District**
> **Facilities Planner**
> p: 925-828-2551 x 8174
> m: 925-383-7914

benavidezpatricia@dublinusd.org

"*Coming together is a beginning, staying together is progress, and working together is success."*
~ Henry Ford

FEHR PEERS

FINAL MEMORANDUM

Date: June 25, 2020

To: Sean Anayah, Placeworks

From: Bill Burton and Mark Howard, Fehr & Peers

Subject: Promenade High School – Level of Service Analysis

WC19-3657

This technical memorandum presents the calculations and findings of the Level of Service (LOS) analyses prepared for the Promenade High School Project located in the City of Dublin. Level of Service is no longer included as a CEQA metric and as such, this analysis is not included in the Project's environmental documentation. However, for informational purposes, this LOS analysis was performed and is provided herein. The analysis has been prepared in accordance with the City of Dublin's (and other governing agencies) historical guidelines, methodologies, and thresholds for LOS within transportation impact assessments.

1. Introduction

This section discusses the study's purpose, study locations, analysis scenarios, analysis methods, and criteria used to identify violations of established Level of Service policies.

Study Purpose and Project Description

The study's purpose is to evaluate the effects of the Project on area roadway Levels of Service. The proposed Project is located at the southeast corner of the Central Parkway and Chancery Lane intersection, as shown in **Figure 1**. The Project site is bounded by Chancery Lane to the west, Central Parkway to the north, residences to the east, and Dublin Boulevard to the south. The Project proposes to construct a high school on a currently vacant site that would accommodate up to 2,545 students. The Project site plan is shown on **Figure 2.**

Five vehicular access points to the Project site are proposed:

- Intersection of Grafton Street and Central Parkway (signalized)

- Intersection of Chancery Lane and Dunmore Lane (unsignalized)
- Driveway on Chancery approximately 280 feet north of Dunmore Lane
- Driveway on Central Parkway approximately 335 feet east of Chancery Lane
- Driveway on Dublin Boulevard approximately 220 feet east of Grafton Street

Study Locations and Analysis Scenarios

The effects of the Project on study area roadway facilities were determined by measuring the change in delay that Project generated traffic would create at intersections in the vicinity of the site during the weekday morning (7:00 to 9:00 AM) and afternoon (3:00 to 5:00 PM) peak periods. The following intersections were selected based on a review of the Project location, estimates of the added traffic from the Project, and locations of existing and planned roadways in the area:

1. Central Parkway/ Tassajara Road
2. Central Parkway/ Brannigan Street
3. Central Parkway/ Grafton Street
4. Central Parkway / Keegan Street
5. Dublin Boulevard/ Tassajara Road
6. Dublin Boulevard/ Brannigan Street
7. Dublin Boulevard/ Grafton Street
8. Dublin Boulevard/ Keegan Street
9. Dublin Boulevard/ Fallon Road
10. Fallon Drive / Gleason Drive
11. Tassajara Road / Gleason Drive
12. Brannigan Street / Gleason Drive
13. Grafton Street / Gleason Drive
14. Central Parkway / Fallon Road
15. Central Parkway / Chancery Lane
16. Brannigan Street / Finnian Way

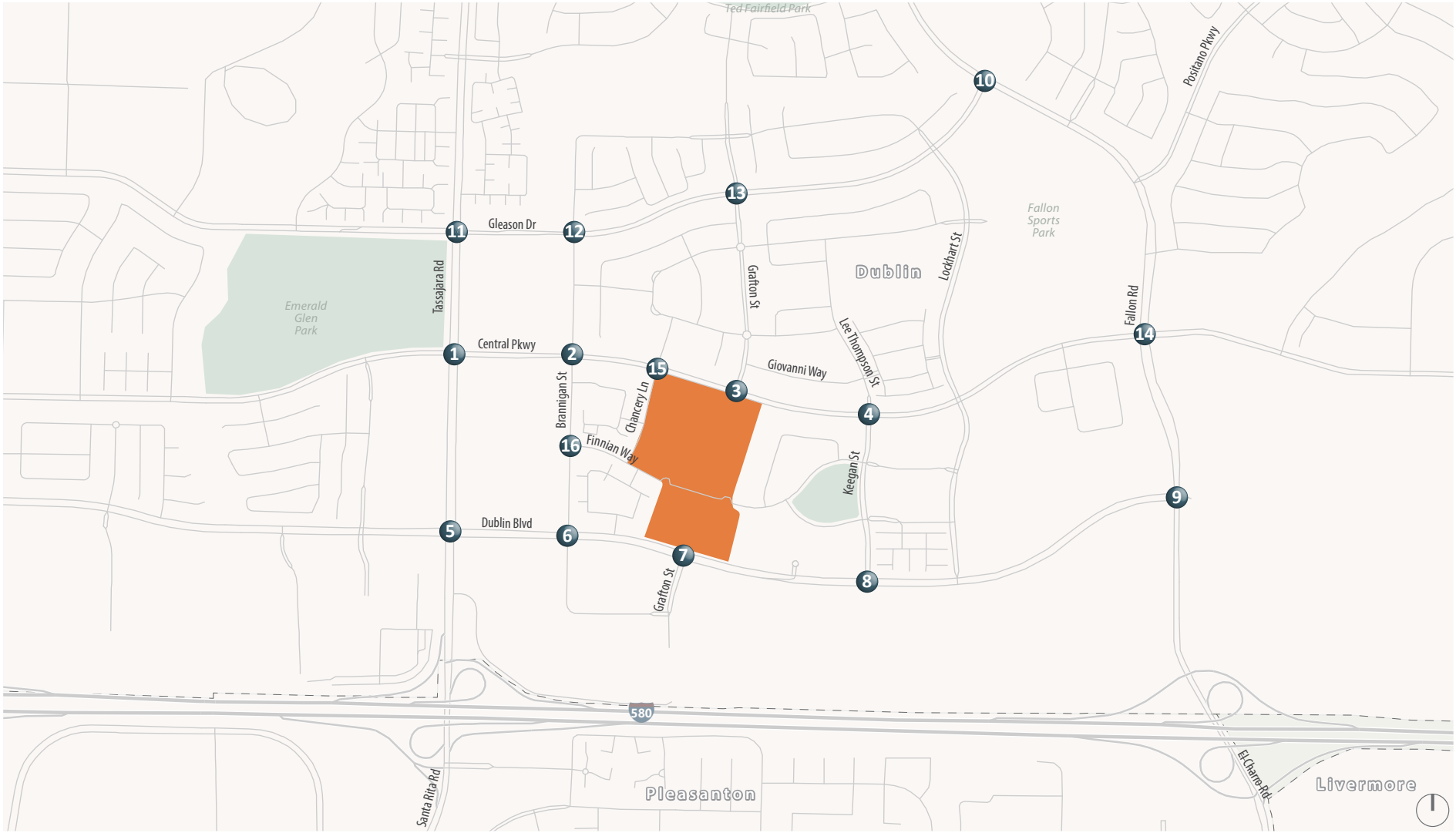
An analysis of roadway segments designated on the Alameda County Transportation Commission's (Alameda CTC) Metropolitan Transportation System network (MTS) was not conducted as the Project would not generate more than 100 net new vehicle trips in the PM peak hour.

The City of Dublin and the Tri-Valley Transportation Plan and Action Plan for Routes of Regional Significance, September 2017, specify the use of the 2010 Highway Capacity Manual (2010 HCM) method for evaluating intersection operations. For intersections that were identified as failing (LOS E or F), the 2000 Highway Capacity Manual (2000 HCM) method was used to assess the volume-to-capacity ratio.

The following scenarios were evaluated:

- ***Existing*** – Existing (2019) conditions based on recent traffic counts.
- ***Existing with Project*** – Existing (2019) conditions with project-related traffic.
- ***Near-Term without Project*** – Forecasts for the near-term scenario are based on traffic growth trends as described in the Dublin General Plan and supplemented by a check of traffic forecasts for the study area in the most recent City of Dublin Travel Demand Model. The scenario reflects conditions over the next five to ten years. Additional details are provided in Section 5.
- ***Near-Term with Project*** – Near-Term forecast conditions with project-related traffic.
- ***Cumulative without Project*** – Forecasts for the cumulative scenario are based on traffic growth trends as described in the Dublin General Plan and supplemented by a check of traffic forecasts for the study area in the most recent City of Dublin Travel Demand Model. The scenario reflects conditions over the next 20 to 25 years. Additional details are provided in Section 6.
- ***Cumulative with Project*** – Future forecast conditions with project-related traffic.

It should be noted that this LOS analysis makes a conservative assessment of the Project's potential effects on area roadways by assigning all Project trips as net new trips to the area's local roadway network. However, students in this part of Dublin will attend a high school with or without the development of the Project. If the Project were not to be developed, area students would use different roadways and travel patterns, ultimately traveling a longer distance by a potentially different mode, to reach their alternative high school destination.

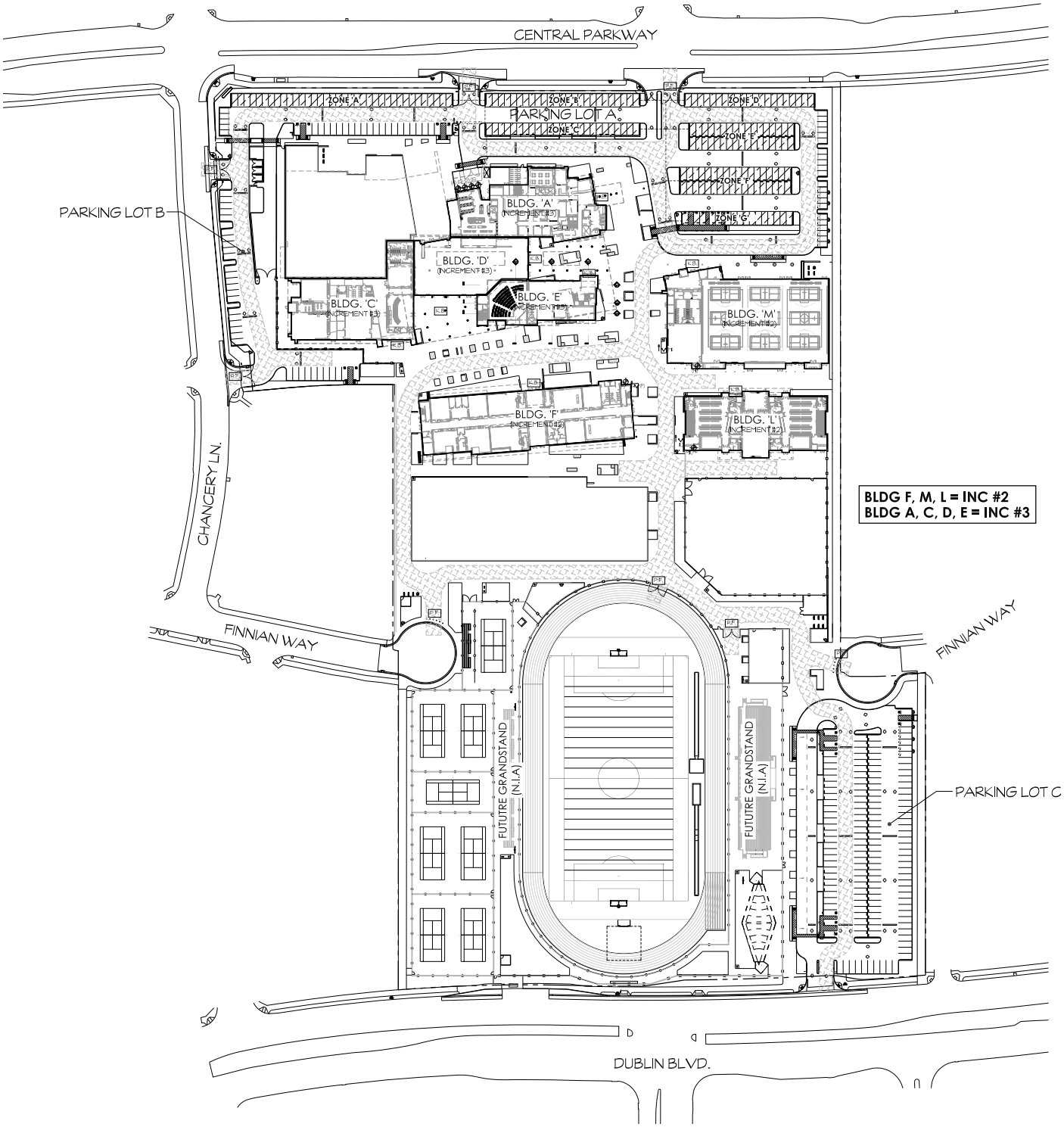


Project Site # Study Intersection

Figure 1

Project Vicinity and Study Intersections

WC19-3657_1_SiteVicinity



Site Plan Source: SIM-PBK Architects, 1/24/20

Figure 2

Conceptual Project Site Plan

Analysis Methods

The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.

Signalized Intersections

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the 2010 *Highway Capacity Manual* (2010 HCM) for vehicles using the analysis software Synchro 10.0. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay for signalized intersections is summarized in **Table 1.**

Unsignalized Intersections

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the 2010 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 2** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.

Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2010 Highway Capacity Manual (Transportation Research Board)

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic, delays where intersection capacity exceeded	> 50.0

Source: 2010 Highway Capacity Manual (Transportation Research Board)

Regulatory Setting and LOS Policies

In general, the Project would result in an violation of a Level of Service Policy if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner

that would substantially impact access or traffic load and capacity of the street system. Per the City's General Plan, Dublin strives to maintain LOS D operations at all intersections.

The following are the applicable policies, regulations, goals, and guidelines defined by the City of Dublin , and Tri-Valley Transportation Council (TVTC).

City of Dublin LOS Policies

- The project conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. A policy violation ***could*** be identified:
    - If a signalized intersection is projected to operate within motor vehicle delay ranges associated with LOS D or better (average control delay equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at a LOS E or F;
    - If at a study signalized intersection where the motor vehicle level of service is E, the project would cause an increase in the average delay for any of the critical movements of six (6) seconds or more.
    - If at a study signalized intersection where the motor vehicle level of service is LOS F, the project would cause (a) the overall volume-to-capacity ("V/C") ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more.
    - A queuing policy violation would be identified if:
        - project traffic causes the 95th percentile queue in a turn pocket to extend beyond the turn pocket by more than 25 feet (i.e., the length of one vehicle) into adjacent traffic lanes that operate (i.e., move) separately from the turn lane; or
        - If the 95th percentile queue already exceeds that turn pocket length under no project conditions, the project traffic lengthens the queue by more than 25 feet.
    - If the operations of an unsignalized study intersection is projected to decline with the addition of project traffic, and if the installation of a traffic signal based on the Manual on Uniform Traffic Control Devices (MUTCD) Peak Hour Signal Warrant (Warrant 3) would be warranted.

For intersections that meet the above criteria, capacity enhancing measures that do not degrade other modes of travel will be considered, including upgrading or installing signal equipment, extending left-turn pocket storage, providing non-motorized facilities to reduce vehicular demand, enhancing capacity on a parallel route and/or enhancing transit access to a site. The determination of a policy violation and the appropriate recommendation should consider the City's Complete Streets policy.

Tri-Valley Transportation Council

LOS policy violations related to intersections on Routes of Regional Significance as defined by the Tri-Valley Transportation Council (TVTC) would be identified if:

- If a signalized intersection is projected to operate within delay ranges associated with less-than-capacity conditions for motor vehicles (i.e., LOS E or better with an average control delay of equal to or less than 80 seconds per vehicle) without the project and the project is expected to cause the facility to operate at a F;
- If at a study, signalized intersection where the motor vehicle level of service is LOS F prior to the addition of project traffic, the project would cause (a) the overall volume-to-capacity ("V/C") ratio to increase 0.03 or more or (b) the critical movement V/C ratio to increase 0.05 or more.

Intersections in downtown areas and/or specifically exempted by local jurisdictions are exempt from this TVTC standard.

2. Existing Conditions

This section describes transportation facilities in the Project study area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities in the Project site vicinity. Existing intersection operations are also described.

Existing Traffic Counts

Weekday morning (7:00 to 9:00 AM) and afternoon (3:00 to 5:00 PM) peak period intersection turning movement counts were collected at the study intersections for three days, Tuesday, November 12, 2019, Wednesday, November 13, 2019, and Thursday, November 14, 2019 with area schools in normal session. Peak hour intersection vehicle volumes are summarized on **Figure 3a** and **3b** along with existing lane configurations and traffic controls. Existing traffic volumes were averaged over the three days. Existing pedestrian and bicycle volumes are summarized on **Figure 4a** and **4b**. The traffic counts for existing conditions are provided in **Attachment A**.

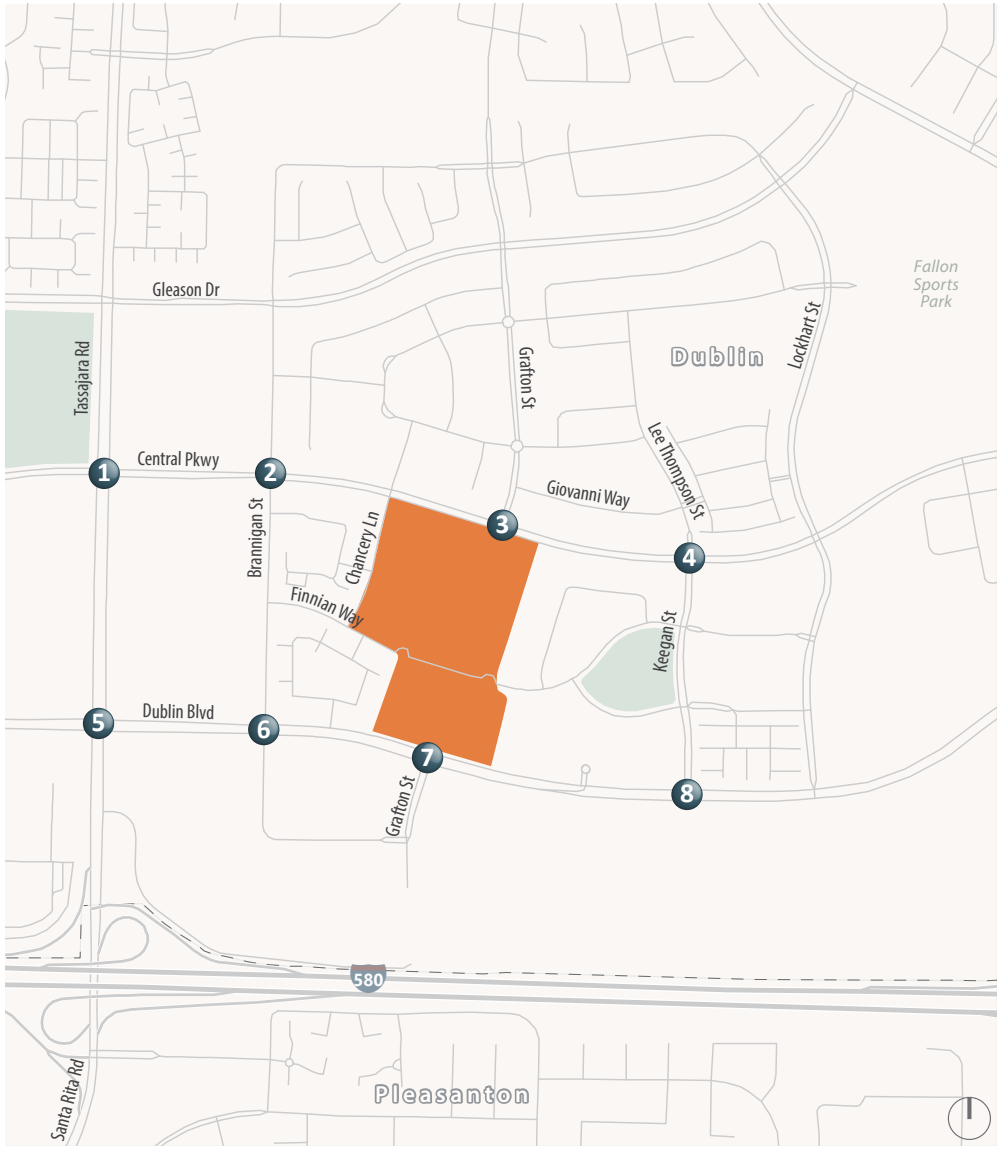
Existing Intersection Levels of Service

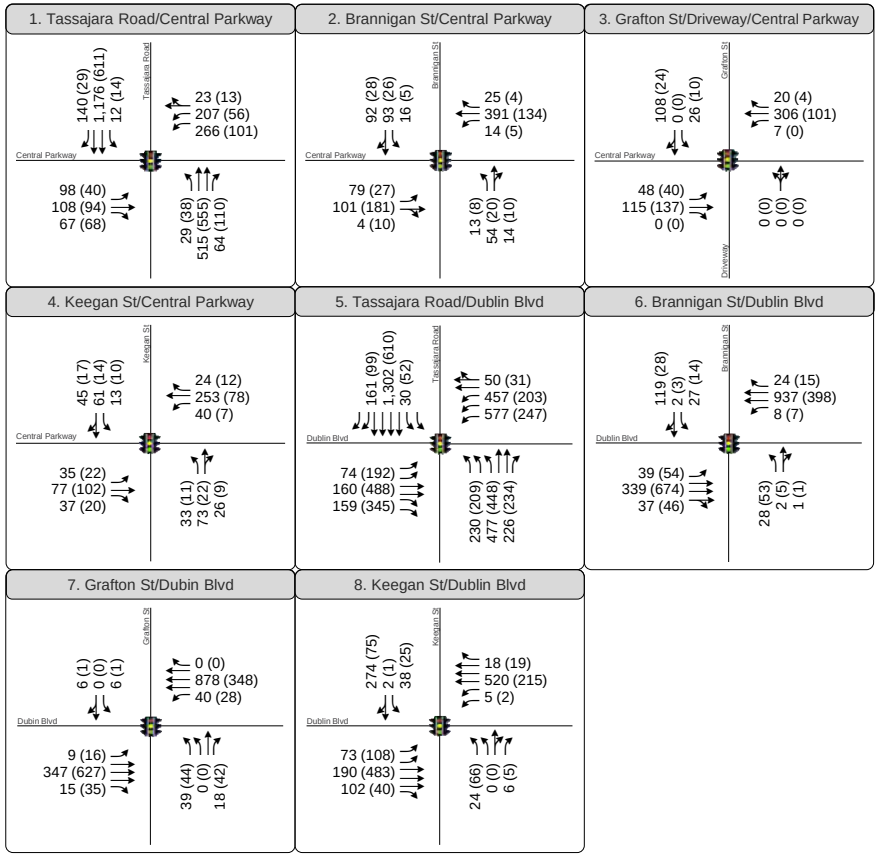
Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were inputted into the Synchro 10.0 software program to calculate the levels of service for the study intersections during each peak hour. The existing conditions peak hour intersection LOS results are presented in **Table** Table 3**3**. Observed peak hour factors[1] were used at all intersections for the existing analysis. Detailed intersection LOS calculation worksheets are presented in **Attachment B**. As shown, all signalized and unsignalized intersections currently operate within the level of service standards set by the City of Dublin.

Existing Vehicle Queues

Although all intersections currently operate within the standards set by the City of Dublin, there can be periodic vehicle queue spillback and delays greater than shown in Table 3 for some movements. **Table 4** presents intersections where vehicle queues may occasionally exceed the vehicle storage length. A summary of existing average and 95th percentile vehicle queue results at all study intersections is provided in **Attachment C.**

[1] The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: PHF = Hourly volume / (4 x (volume during the peak 15 minutes of flow)). The analysis level of served is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.





XX (YY) AM (PM) Peak Hour Traffic Volumes

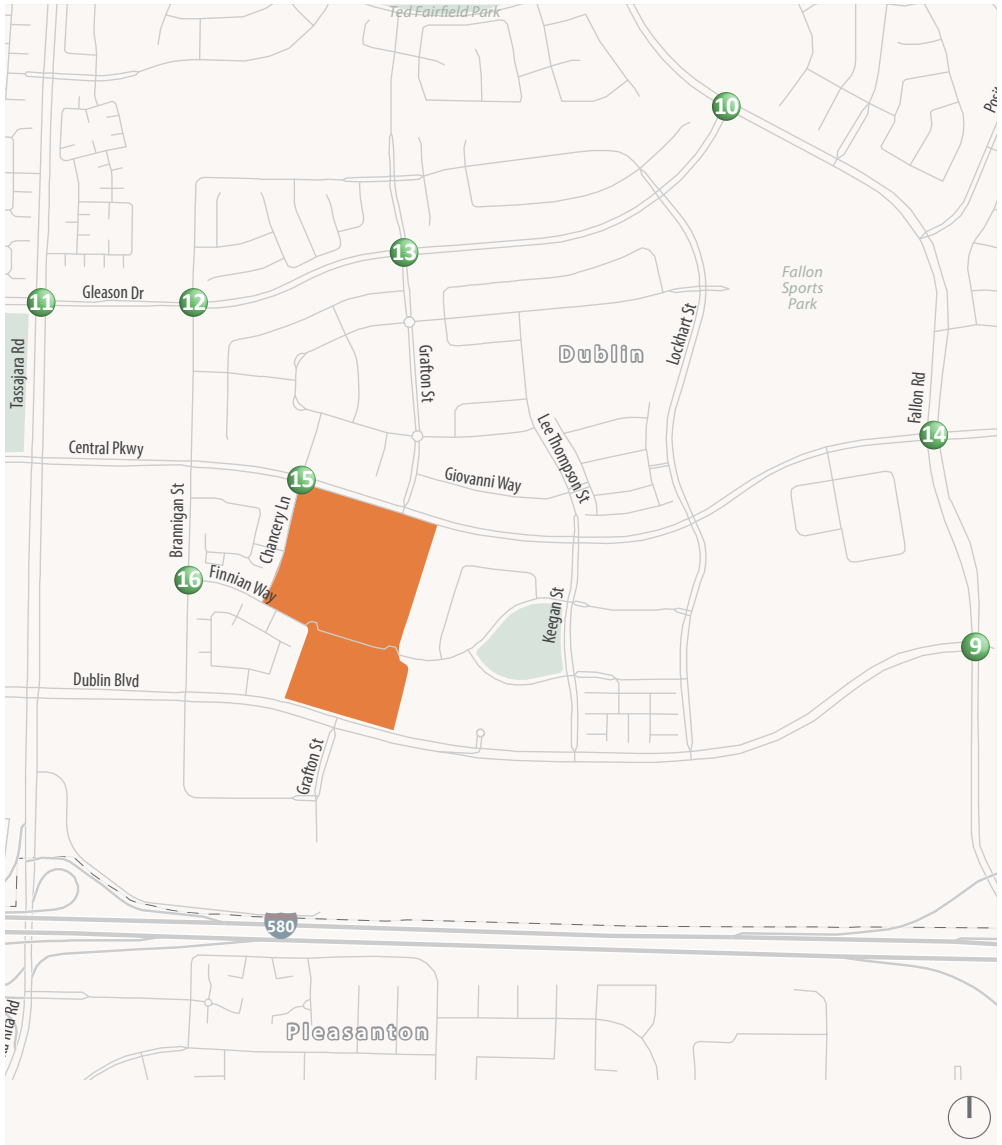
Signalized Intersection

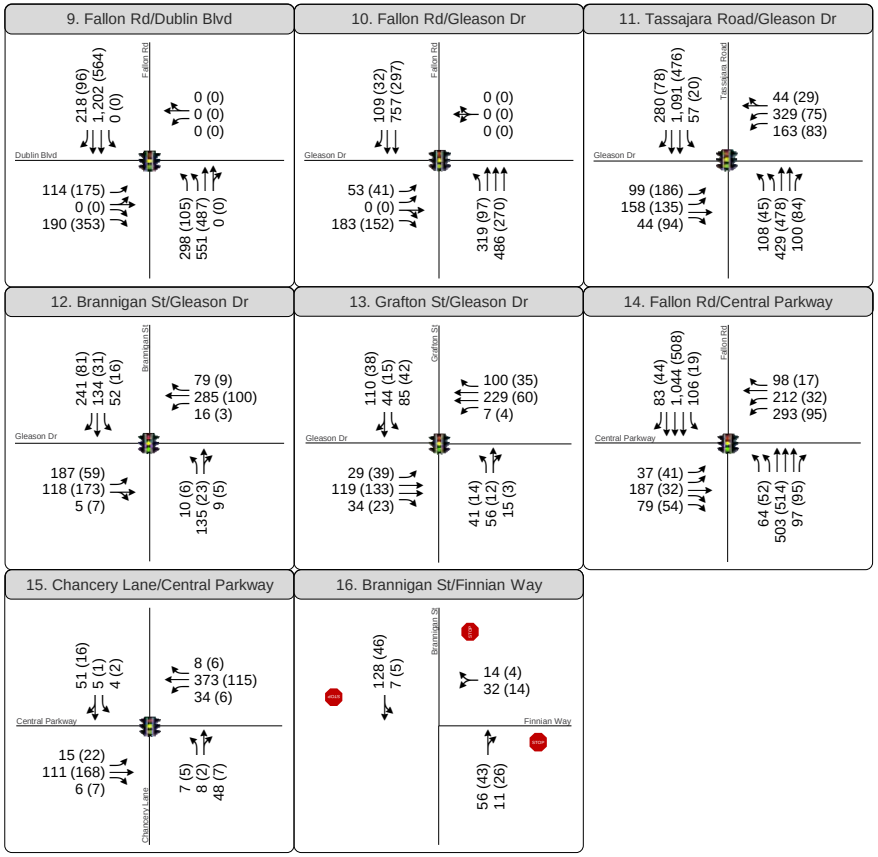
Project Site

Original Scope Study Intersection

Figure 3a

Existing Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

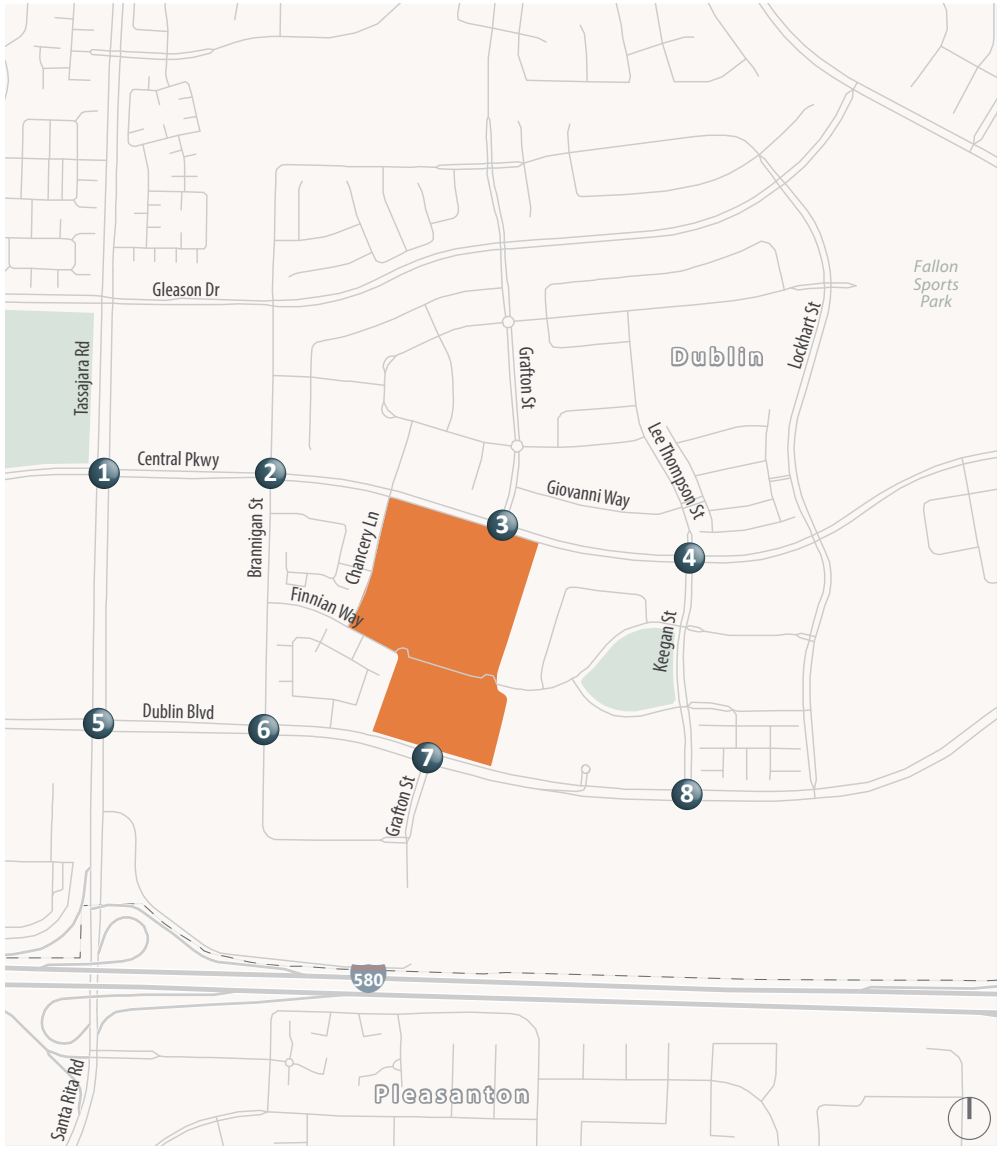
Stop Sign

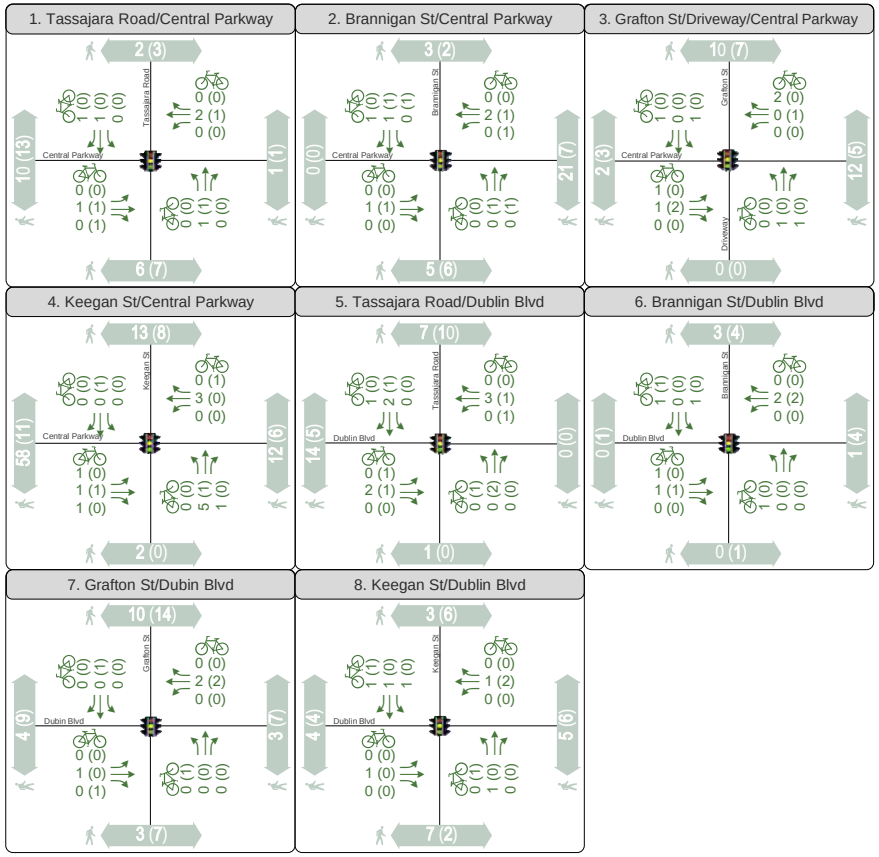
Project Site

City Study Intersection from City's NOP Letter

Figure 3b

Existing Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





0 (0) AM (PM) Peak Hour Pedestrian Volumes

0 (0) AM (PM) Peak Hour Bicycle Volumes

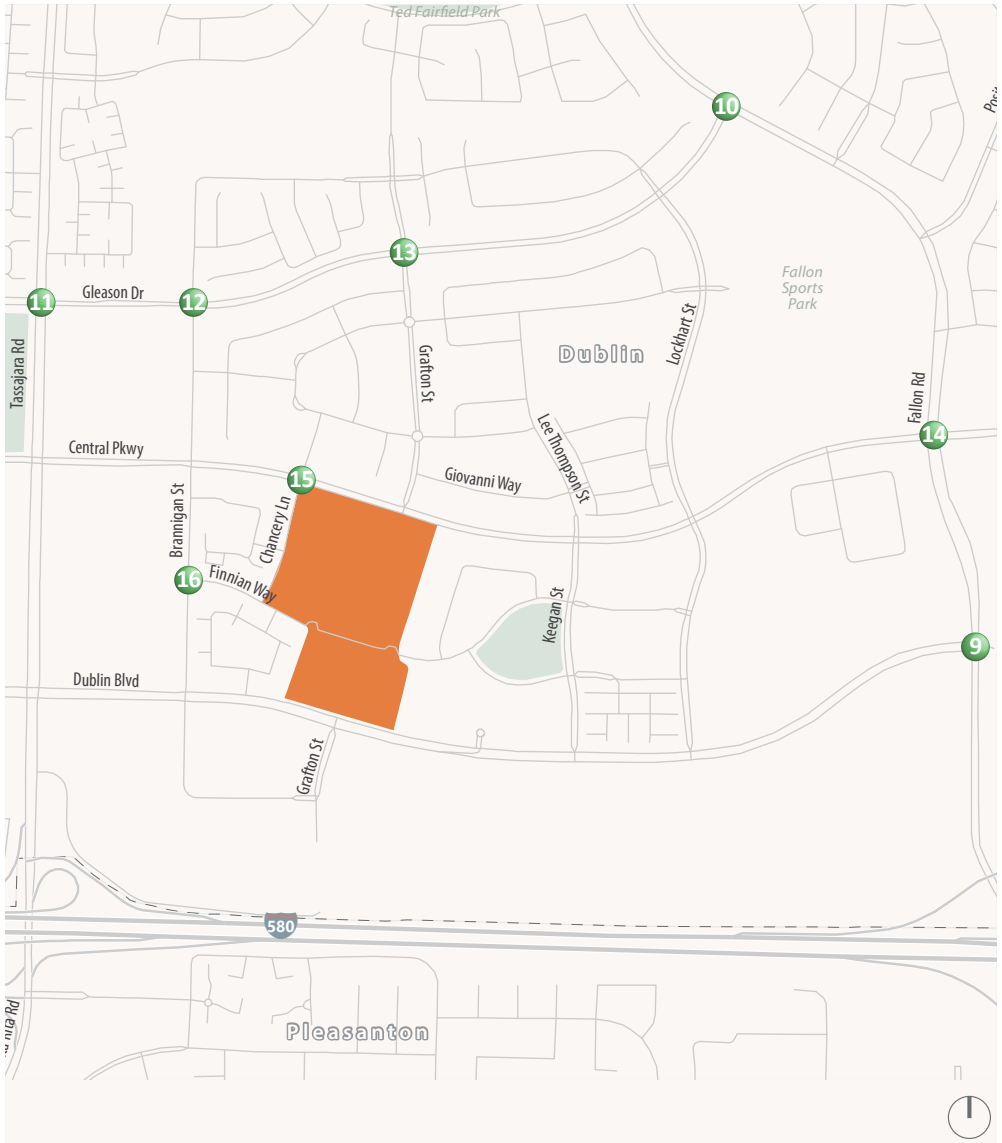
Signalized Intersection

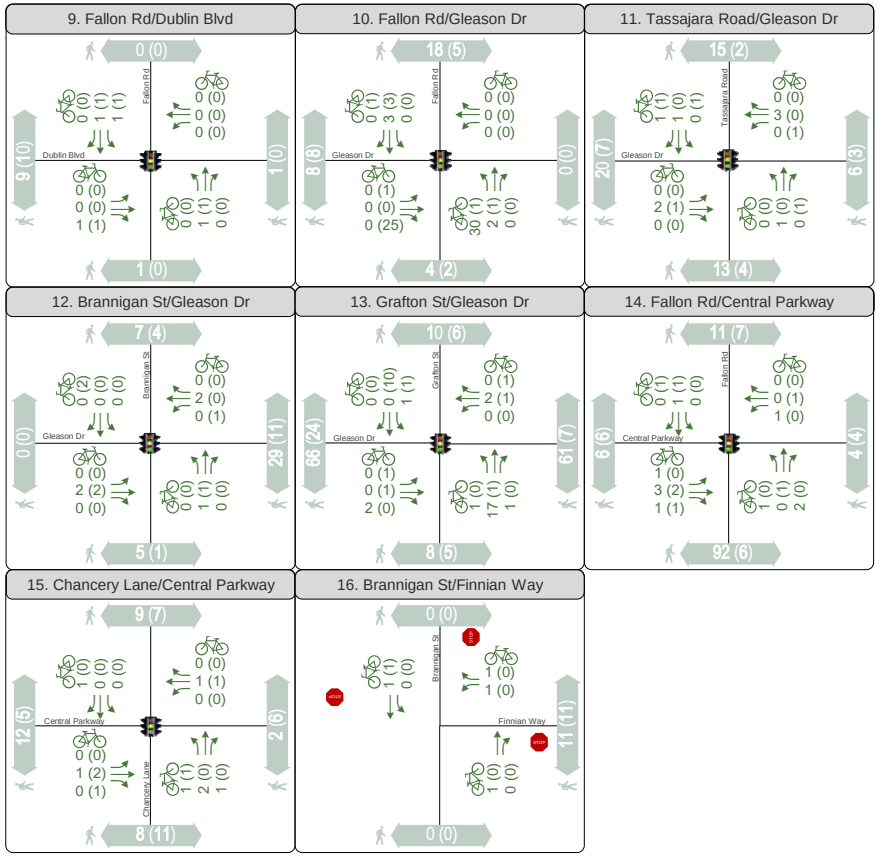
Project Site

Original Scope Study Intersection

Figure 4a

Existing Peak Hour Pedestrian and Bicycle Volumes





0 (0) AM (PM) Peak Hour Pedestrian Volumes

0 (0) AM (PM) Peak Hour Bicycle Volumes

Signalized Intersection

Stop Sign

Project Site

City Study Intersection from City's NOP Letter

Figure 4b

Existing Peak Hour Pedestrian and Bicycle Volumes

Table 3: Existing Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Delay[3]	LOS
1. Central Parkway/ Tassajara Road	Signal	AM PM	33.8 22.1	C C
2. Central Parkway/ Brannigan Street	Signal	AM PM	18.6 11.4	B B
3. Central Parkway/ Grafton Street	Signal	AM PM	9.4 5.8	A A
4. Central Parkway / Keegan Street	Signal	AM PM	19.1 12.2	B B
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	36.8 36.0	D D
6. Dublin Boulevard/ Brannigan Street	Signal	AM PM	9.5 9.9	A A
7. Dublin Boulevard/ Grafton Street	Signal	AM PM	9.1 9.6	A A
8. Dublin Boulevard/ Keegan Street	Signal	AM PM	15.6 14.2	B B
9. Dublin Boulevard/ Fallon Road	Signal	AM PM	16.7 14.1	B B
10. Fallon Drive / Gleason Drive	Signal	AM PM	13.5 8.4	B A
11. Tassajara Road / Gleason Drive	Signal	AM PM	38.0 28.4	D C
12. Brannigan Street / Gleason Drive	Signal	AM PM	31.1 13.4	C B
13. Grafton Street / Gleason Drive	Signal	AM PM	19.6 17.3	B B
14. Central Parkway / Fallon Road	Signal	AM PM	32.1 18.3	C B
15. Central Parkway / Chancery Lane	Signal	AM PM	11.6 9.6	B A
16. Brannigan Street / Finnian Way	AWSC	AM PM	8.0 7.5	A A

Notes:
Notes: **Bold** text indicates unacceptable operations; **Bold Underline** text indicates a policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Table 4: Existing Conditions 95th Percentile Queue Summary

Intersection	Movement	Storage Length (ft)[1]	AM Peak Period	PM Peak Period
10. Fallon Drive / Gleason Drive	NBL	175	**475**	150
12. Brannigan Street / Gleason Drive	EBL	175	**225**	75

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

3. Project Characteristics

This section provides an overview of the proposed Project components and addresses the proposed Project trip generation, distribution, and assignment characteristics, allowing for an evaluation of Project policy violations on the surrounding roadway network. The amount of traffic associated with the Project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the Project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Description

The Project site is located at the southeast corner of the Central Parkway and Chancery Lane intersection, as shown in Figure 1. The Project site is bounded by Chancery Lane to the west, Central Parkway to the north, residences to the east, and Dublin Boulevard to the south. The Project proposes to construct a high school on a vacant site that would accommodate up to 2,545 students.

Five vehicular access points to the Project site are proposed, including:

- Intersection of Grafton Street and Central Parkway (signalized)
- Intersection of Chancery Lane and Dunmore Lane (unsignalized)
- Driveway on Chancery approximately 280 feet north of Dunmore Lane
- Driveway on Central Parkway approximately 335 feet east of Chancery Lane

- Driveway on Dublin Boulevard approximately 220 feet east of Grafton Street

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. In addition to estimates of daily traffic, estimates are also created for the peak one-hour periods during the weekday morning peak hour of adjacent street traffic (7:00-9:00 AM) and the afternoon peak hour of generator. The morning trip generation evaluates the period when traffic volumes on adjacent streets are typically the at their highest and the project is expected to generate the most traffic. The afternoon peak hour represents the hour after school when the school generates the most traffic (3:00 to 5:00 PM). Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition), land use code 530 for High School. Project trip generation estimates are presented in **Table 5**. The Project is expected to generate approximately 5,170 daily vehicle trips, including approximately 1,323 morning peak hour and 840 afternoon peak hour trips.

Table 5: Project Vehicular Trip Generation Summary

Use	Size	Daily	AM Peak Hour (7-9 AM)			PM Peak Hour (3-5 PM)		
			In	Out	Total	In	Out	Total
High School	2,545 Students	5,170	887	437	1,323	264	571	840

Notes: ITE land use category 530 – High School (Adj. Streets, 7-9A, PM Peak Hour Generator):
Weekday AM Peak Hour: Average rate of 0.52; Enter = 67%; Exit = 33%
Weekday PM Peak Hour: Average rate of 0.33; Enter = 32%; Exit = 68%
Source: *Trip Generation Manual* (10th Edition), ITE; Fehr & Peers.

Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. The school district provided a map of the locations of student addresses, which is shown on **Figure 5**. Estimates of project trip distribution were developed based on the locations of these high school student addresses in combination with existing travel patterns, the locations of complementary land uses, and travel demand model information. The resulting trip distribution percentages are shown on **Figure 6**. The project trip generation estimates, in combination with the expected trip distribution patterns, were used to assign vehicle trips to the local roadway network, as shown on **Figure 7a** and **7b**.

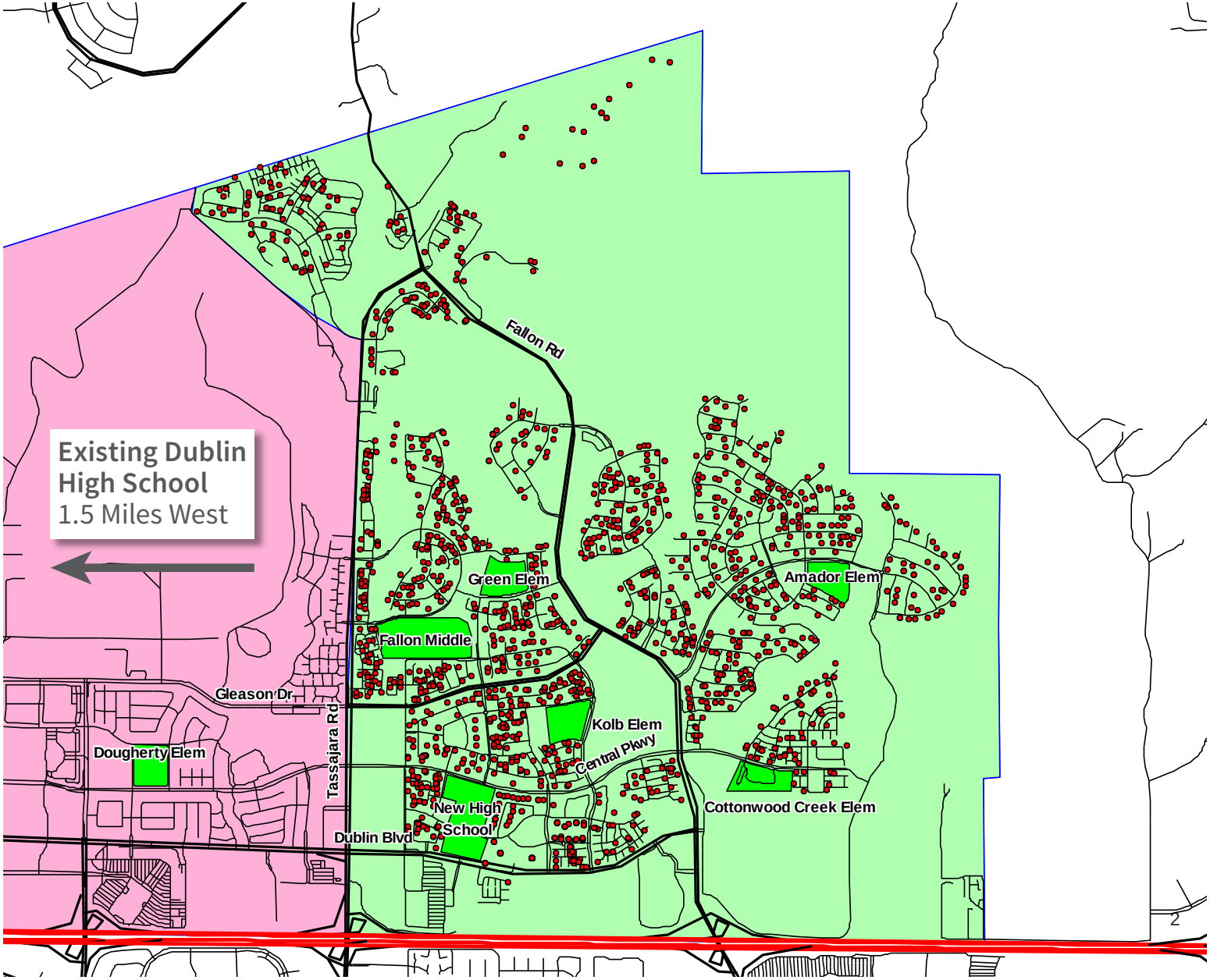
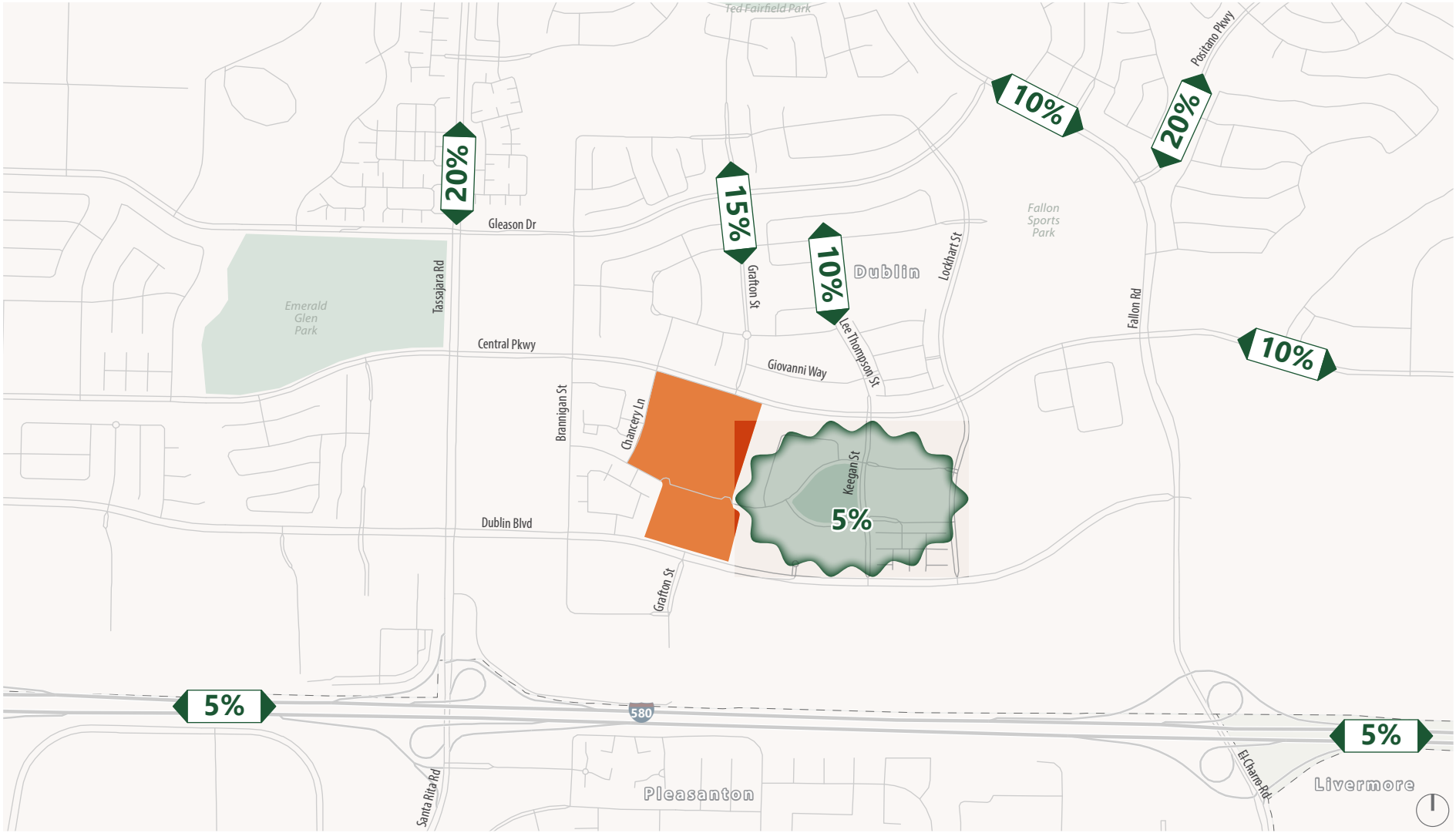


Figure 5

Estimated Distribution of Promenade High School Students

WC19-3657_5_StudentAddress



Project Site XX% Project Trip Distribution

Figure 6

Proposed Project Trip Distribution

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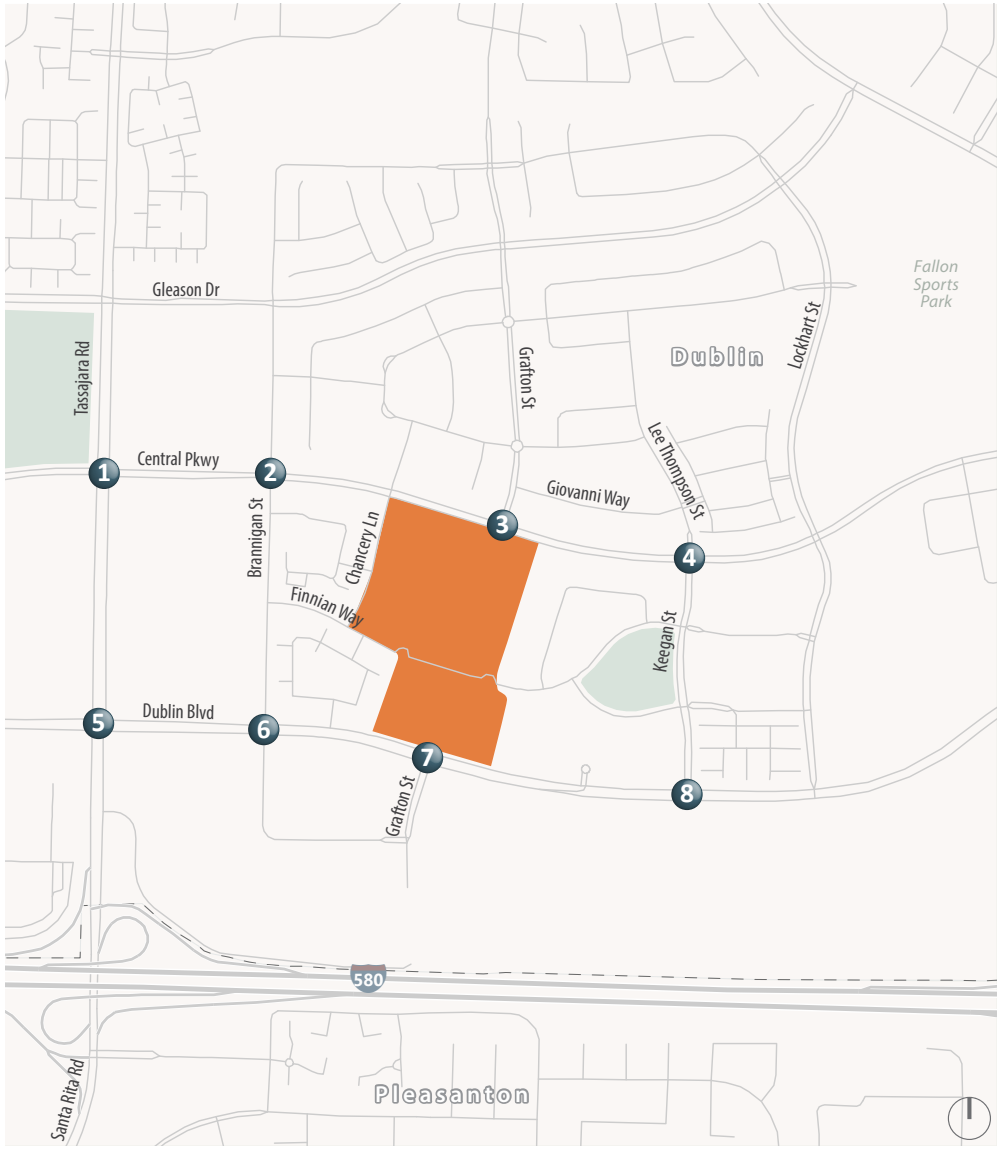
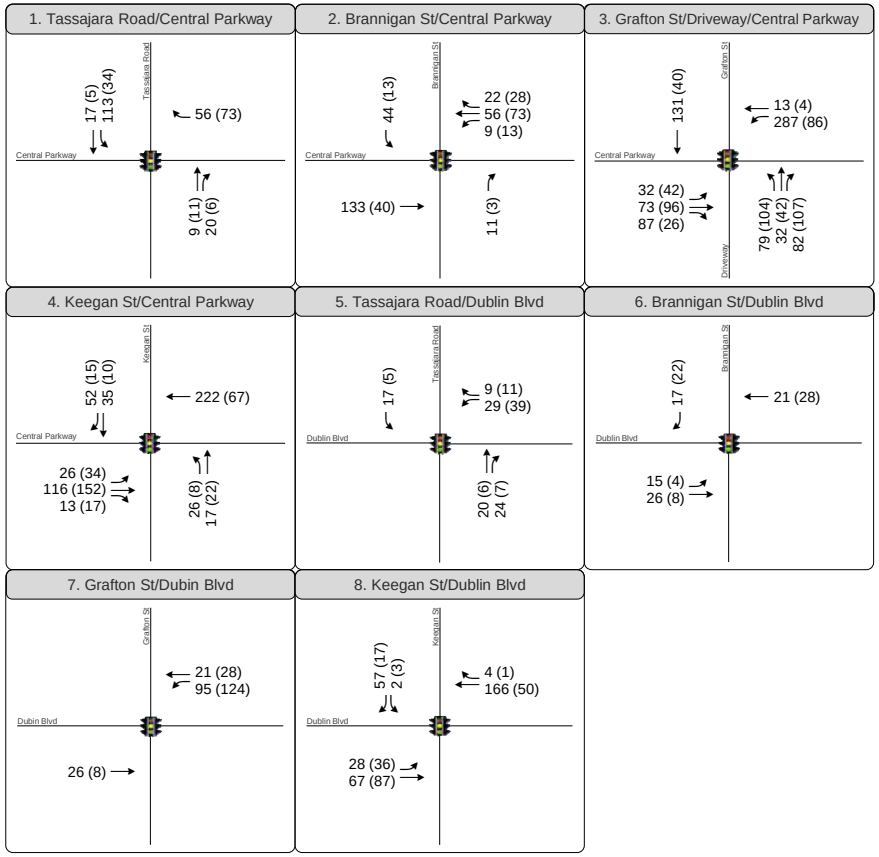




XX (YY) AM (PM) Peak Hour Traffic Volumes

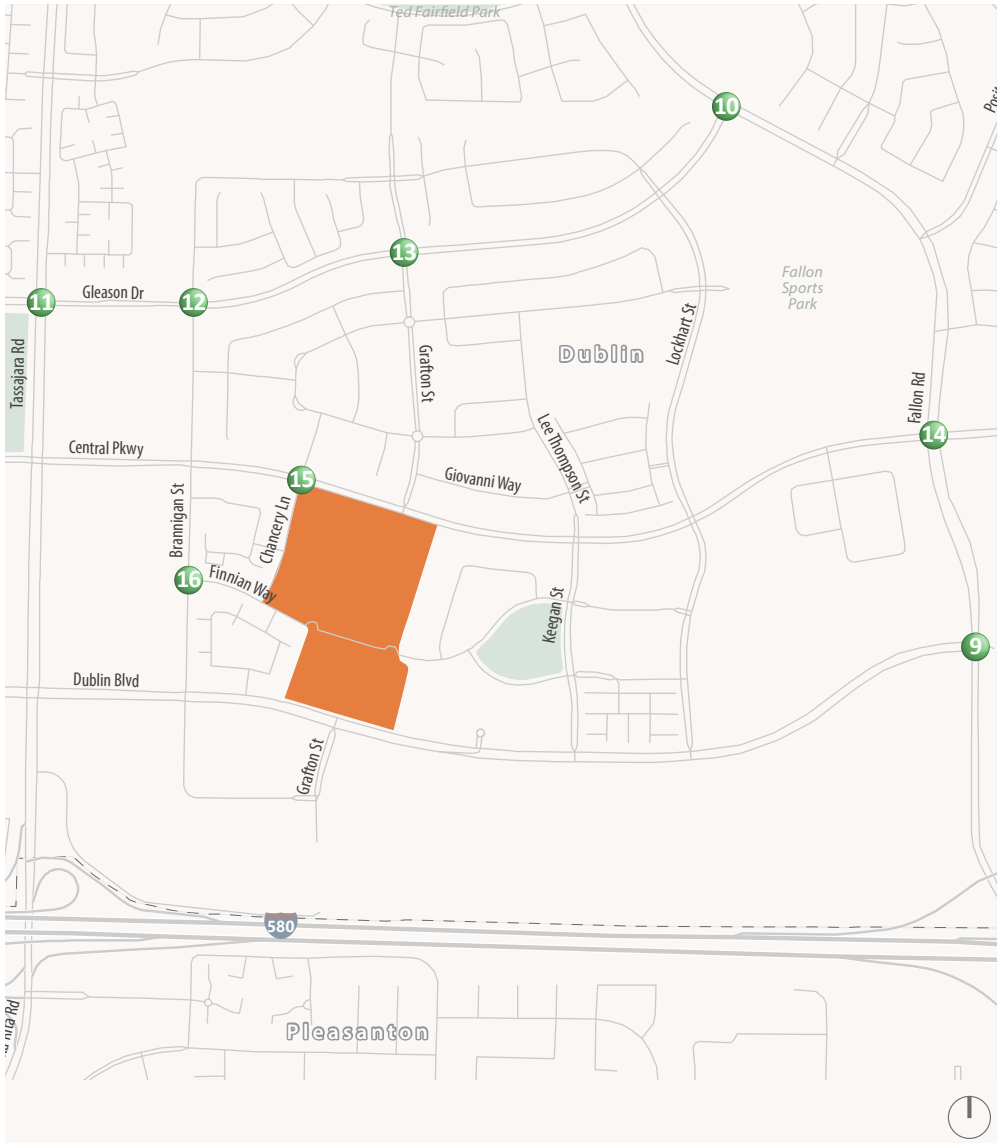
Signalized Intersection

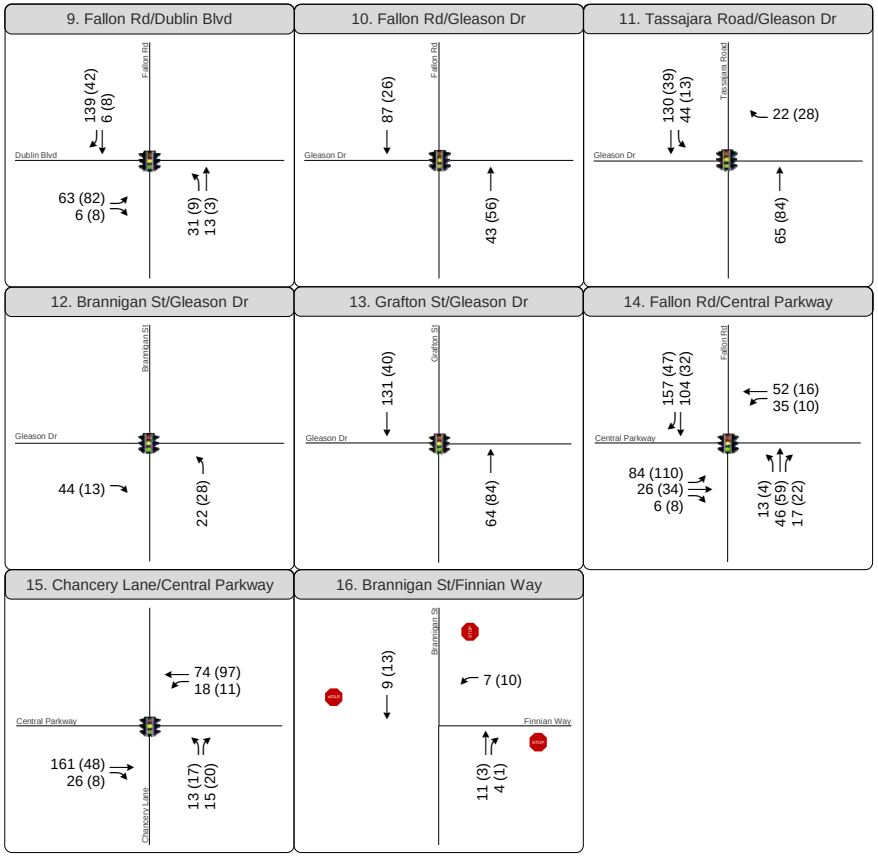
Project Site

Original Scope Study Intersection

Figure 7a

Peak Hour Project Trip Assignment





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

City Study Intersection from City's NOP Letter

Figure 7b

Peak Hour Project Trip Assignment

4. Existing with Project Traffic Conditions

This section presents the evaluation of intersection Levels of Service under Existing with Project conditions.

Existing with Project Traffic Volumes

The Project traffic volumes on Figure 7a and 7b were added to the existing traffic volumes from Figure 3 to estimate the Existing with Project traffic volumes, as shown on **Figure 8a** and **8b.**

Analysis of Existing with Project Conditions

Intersection Operations

Existing with Project intersection operations were evaluated using the methods descried in Section 1. The Existing with Project analysis results are presented in **Table 6**, based on the traffic volumes and intersection configurations presented on Figure 8a and 8b. Table 6 also includes the operations results for Existing conditions. The addition of project traffic would increase delay at the signalized and unsignalized study intersections. No signalized and unsignalized intersections that are currently operating within the City's level of service standards are projected to degrade beyond the established standard with the addition of Project traffic in the existing condition.

Vehicle Queues

The addition of Project traffic is expected to increase vehicle left-turn queues at study intersections, as seen in **Table 7**. Based on the information provided in Attachment C, the addition of Project traffic would potentially result in vehicle queues exceeding the available storage, or would increase vehicle queues by more than 25 feet (one vehicle) for movements where the queue already exceed the available storage for the following movements:

- Central Parkway at Grafton Street/Project Driveway – westbound left-turn (storage capacity of 275-feet) increase from 25 to 300 feet in the morning peak hour.

Table 6: Existing with Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Existing		Existing with Project	
			Delay[3]	LOS	Delay[3]	LOS
1. Central Parkway/ Tassajara Road	Signal	AM PM	33.8 22.1	C C	37.8 24.3	D C
2. Central Parkway/ Brannigan Street	Signal	AM PM	18.6 11.4	B B	20.0 12.6	B B
3. Central Parkway/ Grafton Street	Signal	AM PM	9.4 5.8	A A	21.7 14.9	C B
4. Central Parkway / Keegan Street	Signal	AM PM	19.1 12.2	B B	36.4 14.0	D B
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	36.8 36.0	D D	36.8 36.3	D D
6. Dublin Boulevard/ Brannigan Street	Signal	AM PM	9.5 9.9	A A	9.8 10.1	A B
7. Dublin Boulevard/ Grafton Street	Signal	AM PM	9.1 9.6	A A	7.4 9.9	B B
8. Dublin Boulevard/ Keegan Street	Signal	AM PM	15.6 14.2	B B	16.3 14.7	B B
9. Dublin Boulevard/ Fallon Road	Signal	AM PM	16.7 14.1	B B	17.0 14.7	B B
10. Fallon Drive / Gleason Drive	Signal	AM PM	13.5 8.4	B A	16.5 8.8	B A
11. Tassajara Road / Gleason Drive	Signal	AM PM	38.0 28.4	D C	41.8 28.8	D C
12. Brannigan Street / Gleason Drive	Signal	AM PM	31.1 13.4	C B	31.1 14.1	C B
13. Grafton Street / Gleason Drive	Signal	AM PM	19.6 17.3	B B	20.1 17.5	C B
14. Central Parkway / Fallon Road	Signal	AM PM	32.1 18.3	C B	36.8 20.5	D C
15. Central Parkway / Chancery Lane	Signal	AM PM	11.6 9.6	B A	12.3 11.3	B B
16. Brannigan Street / Finnian Way	AWSC	AM PM	8.0 7.5	A A	8.1 7.6	A A

Notes: **Bold** text indicates unacceptable operations; **Bold Underline** text indicates policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Table 7: Existing with Project Conditions 95th Percentile Queue Summary

Intersection	Movement	Storage Length (ft)[1]	AM Peak Period		PM Peak Period	
			Without Project	With Project	Without Project	With Project
3. Central Parkway/ Grafton Street	WBL	275	25	**300**	0	100
10. Fallon Drive / Gleason Drive	NBL	175	**475**	**475**	150	150
12. Brannigan Street / Gleason Drive	EBL	175	**225**	**225**	75	75

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

Existing Conditions Policy Violations and Recommendations

This section evaluates the intersection LOS and queue results presented in Table 6 and 7 and compares the results with established criteria previously summarized. The effectiveness of the recommended improvements is shown in **Table 8** and **Table 9.** The Project was not found to result in intersection Levels of Service degrading below the City's policy standards. The Project was found to result in queues extending outside of available storage at one intersection.

Policy Exceedance 1: The project would potentially result in left-turn vehicle queues exceeding the available storage at the following intersection:

- Central Parkway at Grafton Street/Project Driveway – westbound left-turn in the AM peak hour.

This conflicts with the City of Dublin's policy on left turn queue storage.

Recommended Improvement 1: Intersection 3, Central Parkway at Grafton Street

The installation of northbound and southbound left-turn protective signal phasing and increasing the westbound left-turn pocket by 100 feet for a storage of 350 feet would eliminate this issue. Implementing this measure would reduce the queue spillback to an acceptable level, as presented in Table 9.

Table 8: Existing with Project with Recommendation Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Existing		Existing with Project		Existing with Project Rec	
			Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS
3. Central Parkway/ Grafton Street	Signal	AM	9.4	A	21.7	C	30.0	C
		PM	5.8	A	14.9	B	20.2	C

Notes: **Bold** text indicates unacceptable operations; **Bold Underline** text indicates policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

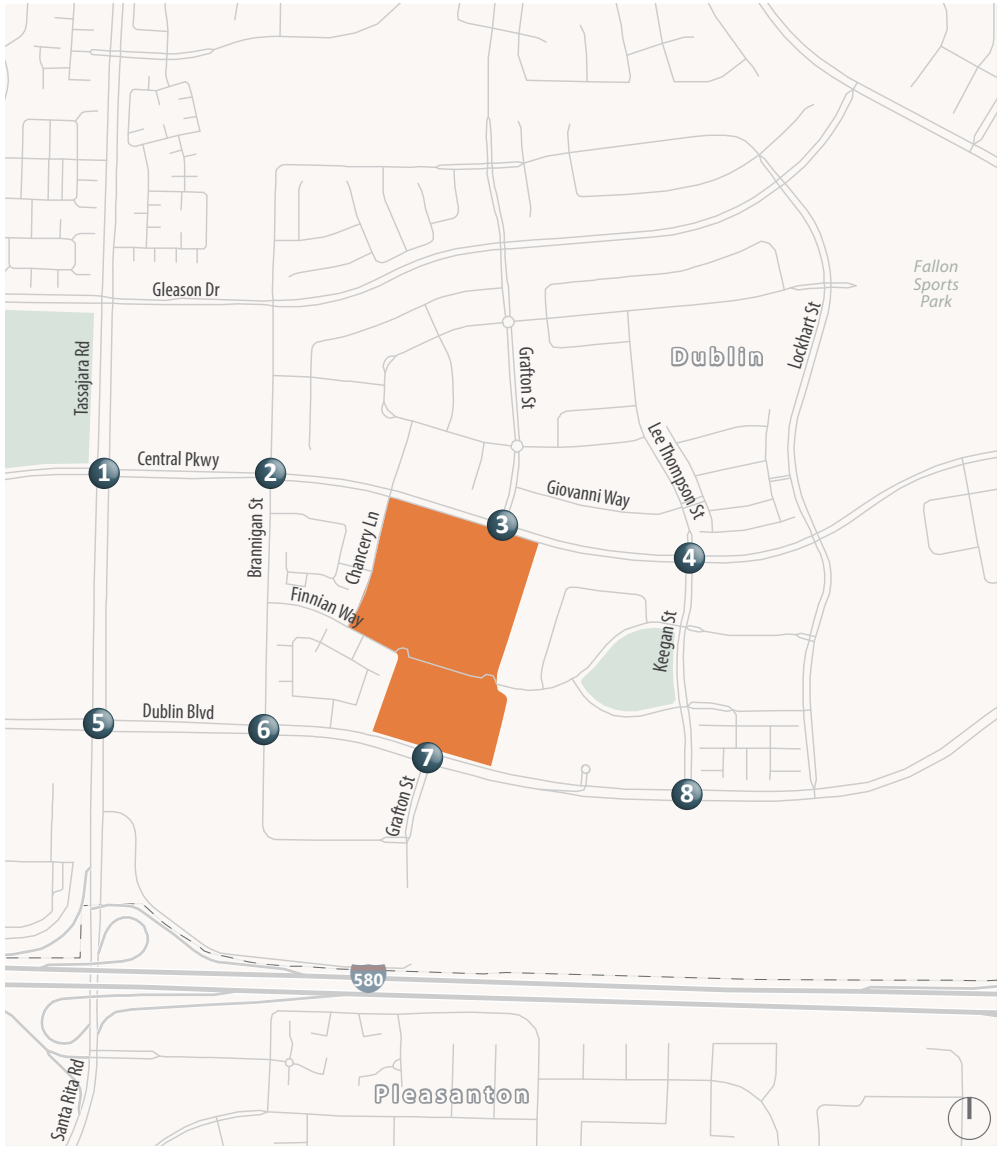
Table 9: Existing with Project with Recommendations Conditions 95th Percentile Queue Summary

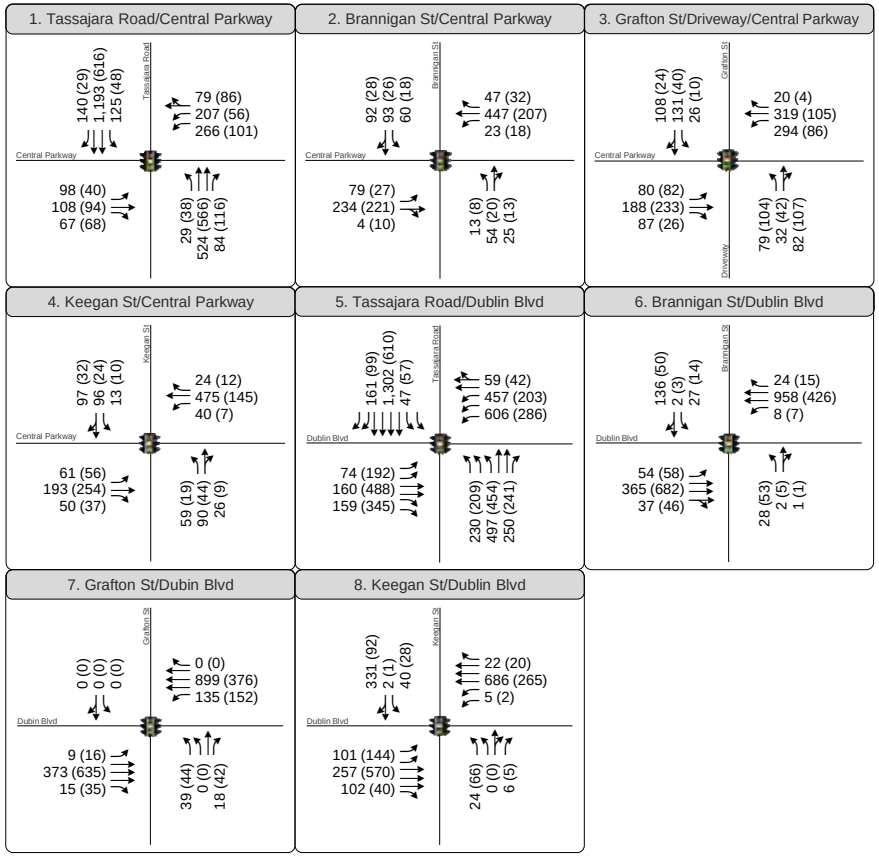
Intersection	Movement	New Storage Length (ft)[1]	AM Peak Period			PM Peak Period		
			Without Project	With Project	With Rec	Without Project	With Project	With Rec
3. Central Parkway / Grafton Street	WBL	350	25	**<u>300</u>**	350	0	100	75

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.





XX (YY) AM (PM) Peak Hour Traffic Volumes

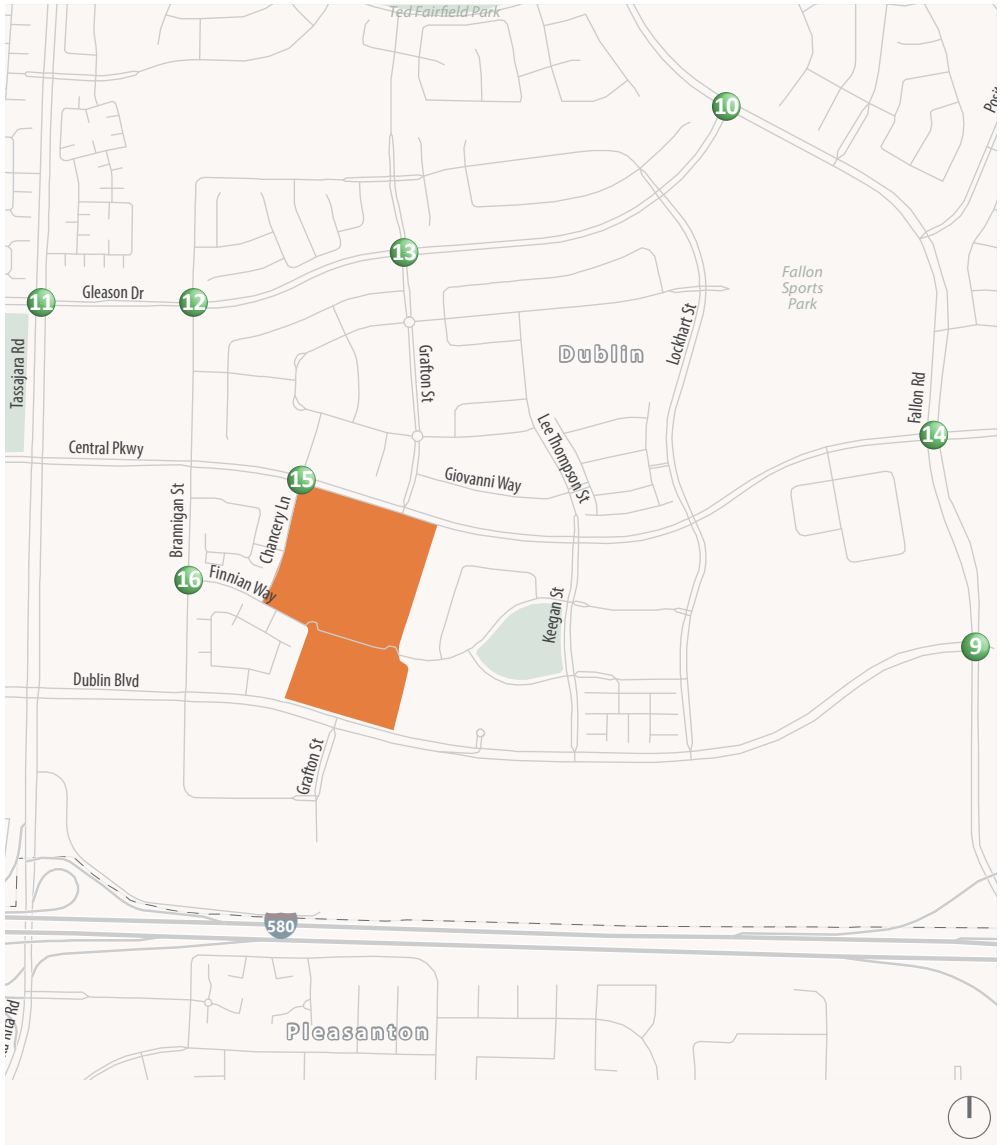
Signalized Intersection

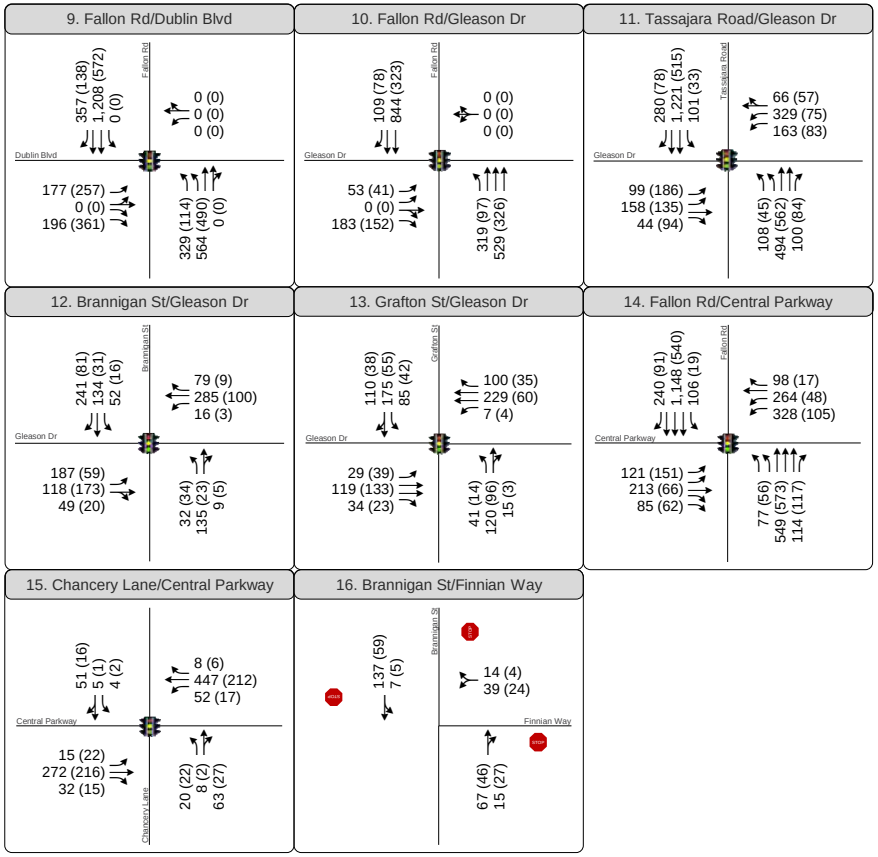
Project Site

Original Scope Study Intersection

Figure 8a

Existing with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

City Study Intersection from City's NOP Letter

Figure 8b

Existing with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

5. Near-Term Traffic Conditions

This section presents the results of the level of service calculations under near-term conditions without and with the Project. Traffic volumes for Near-term without Project conditions are made up of existing volumes plus traffic generated by approved but not yet constructed and occupied developments in the area. Near-term with Project conditions are defined as Near-term without Project conditions plus new traffic generated by the proposed Project.

Near-Term Intersection Volumes and Near-Term Roadway Improvements

Traffic volumes for the Near-term condition were developed using the updated City of Dublin Travel Demand Model. The forecasts represent likely traffic conditions in the area over the next ten years. Near-Term without Project traffic volumes are shown on **Figure 9a** and **9b.** The Project traffic volumes from Figure 7a and 7b were added to the Near-term without Project traffic volumes to estimate the Near-term with Project traffic volumes, as shown on **Figure 10a** and **10b.** No roadway improvements were assumed at any of the study intersections for the analysis of near-term conditions. Heavy vehicle percentages, peak hour factors, traffic signal timings, and pedestrian and bicycle activity at the study intersections were left unchanged from existing conditions.

Analysis of Near-Term Conditions

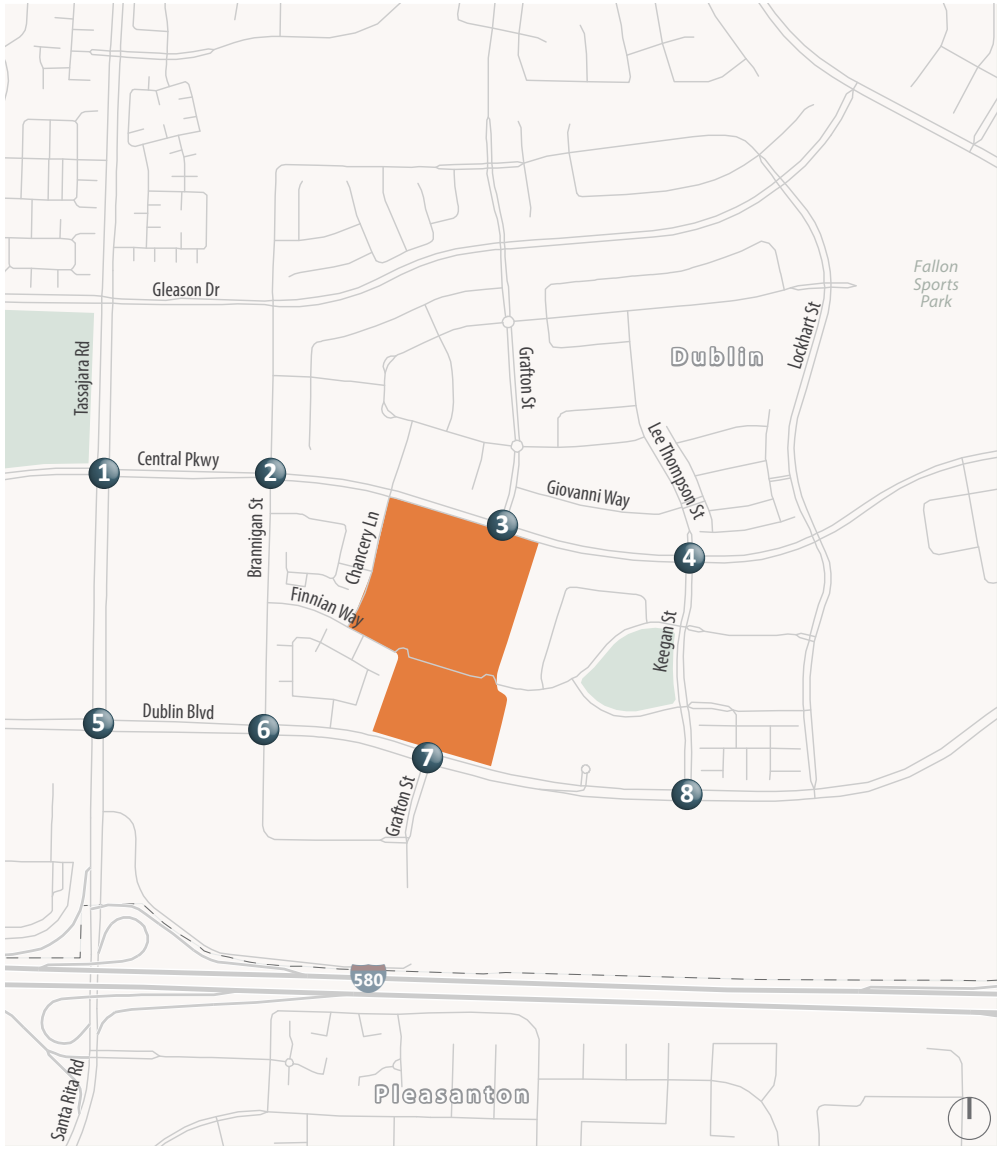
Intersection Operations

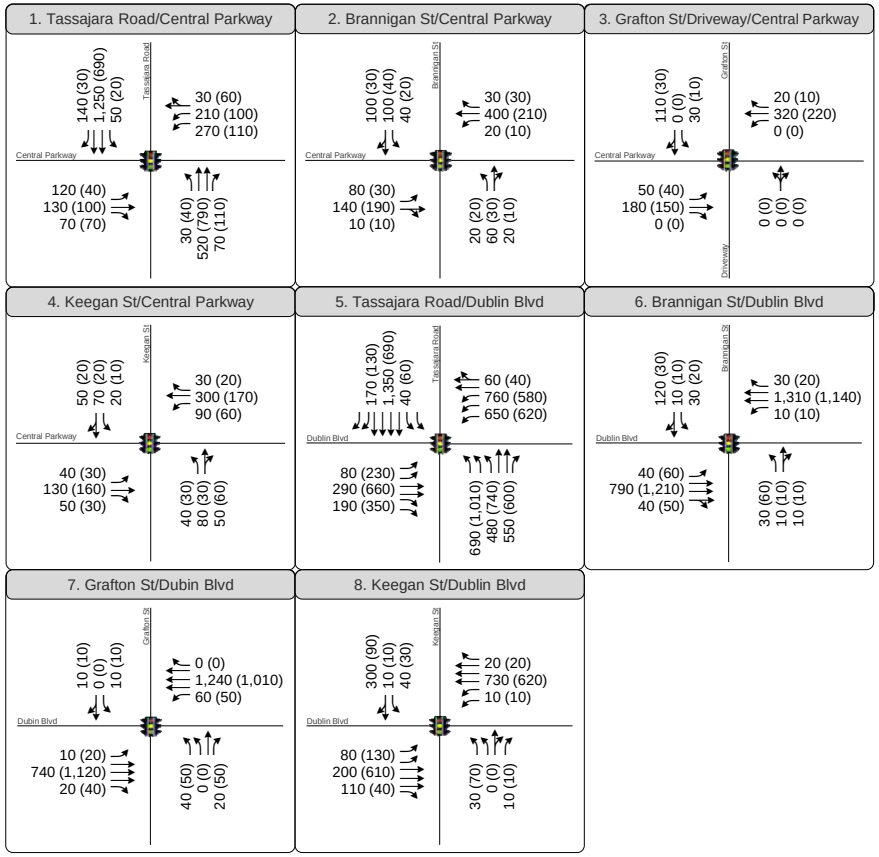
Levels of service calculations were conducted to evaluate intersection operations under Near-term conditions both without and with the Project. The LOS results are summarized in **Table 10**. The corresponding LOS calculation sheets are included in **Attachment B**. The results of the LOS calculations indicate that with planned development in Dublin and adjacent jurisdictions in the near-term, the following intersection would operate at LOS F prior to the addition of Project traffic:

- Dublin Boulevard at Tassajara Road (LOS F, PM peak)

The addition of Project traffic is expected to degrade the operation of Dublin Boulevard at Tassajara Road (LOS F, PM peak). The addition of Project traffic is expected to worsen the operation and result in operations degrading below LOS D at Tassajara Road at Gleason Drive (LOS E, AM peak).

All other study intersections would continue to operate at LOS D or better with the addition of Project traffic in the near-term condition.





XX (YY) AM (PM) Peak Hour Traffic Volumes

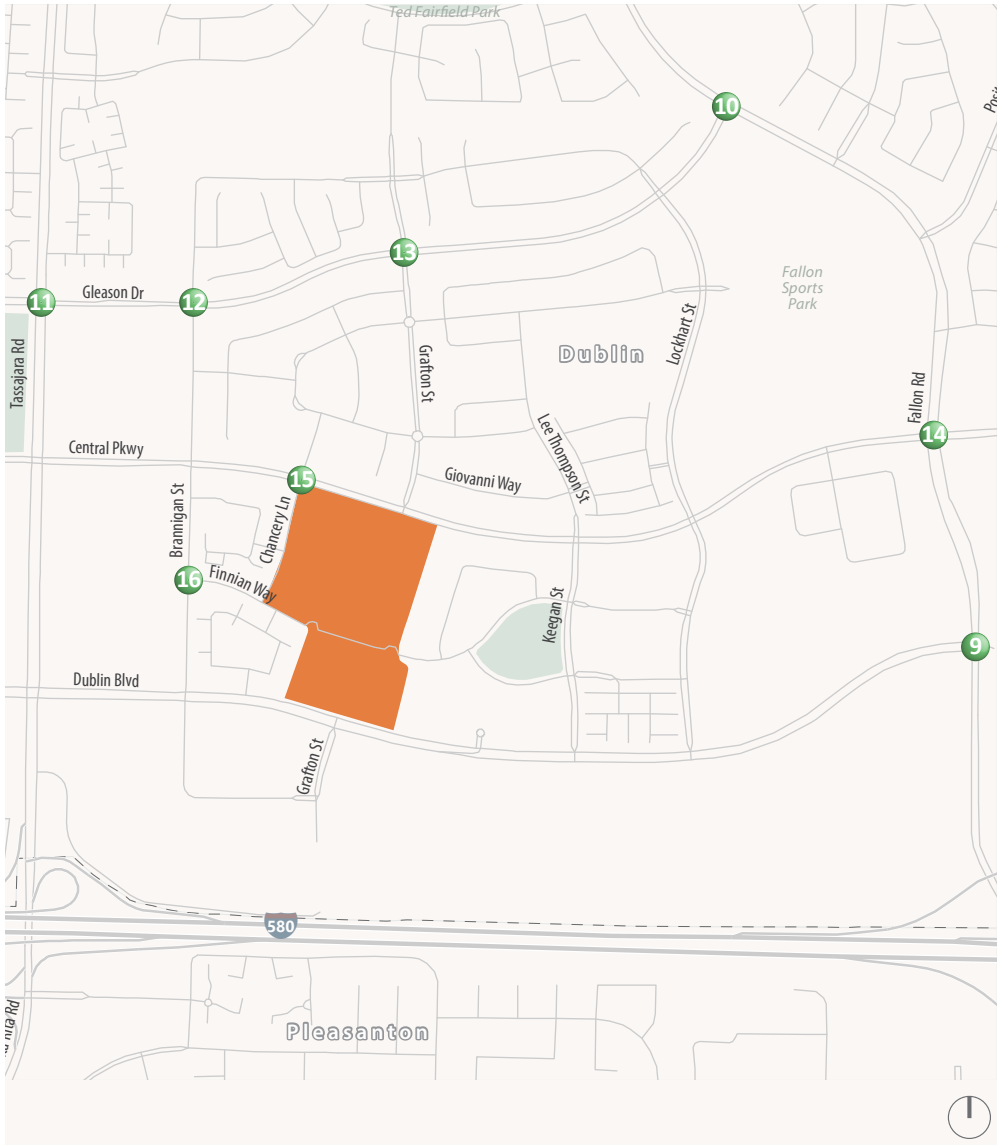
Signalized Intersection

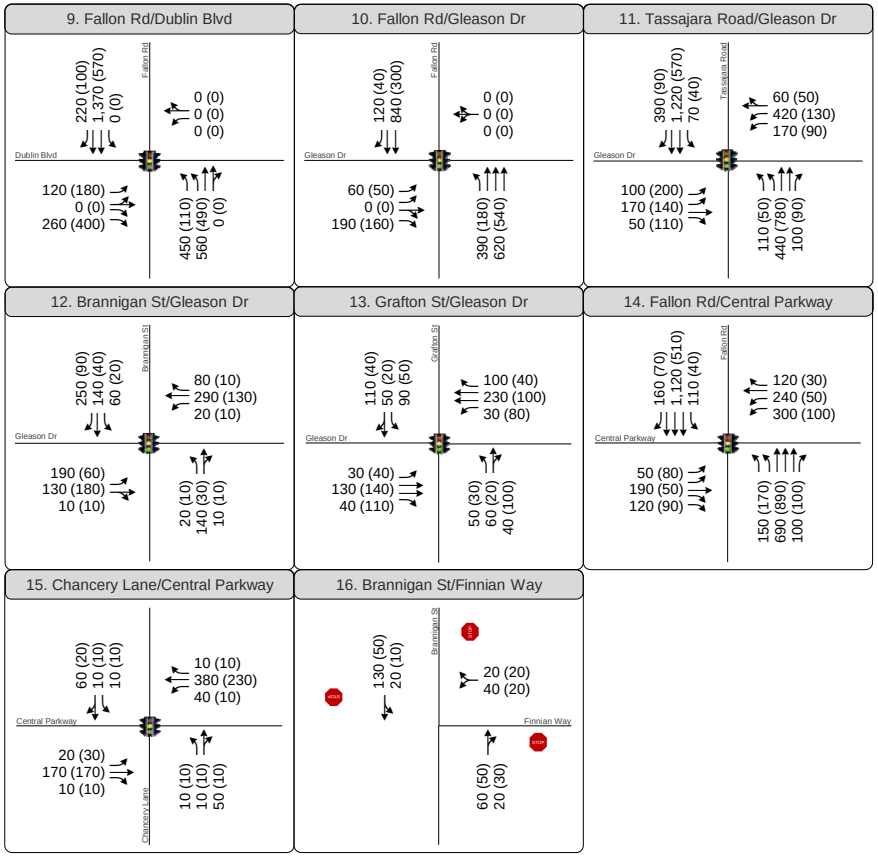
Project Site

Original Scope Study Intersection

Figure 9a

Near-term without Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

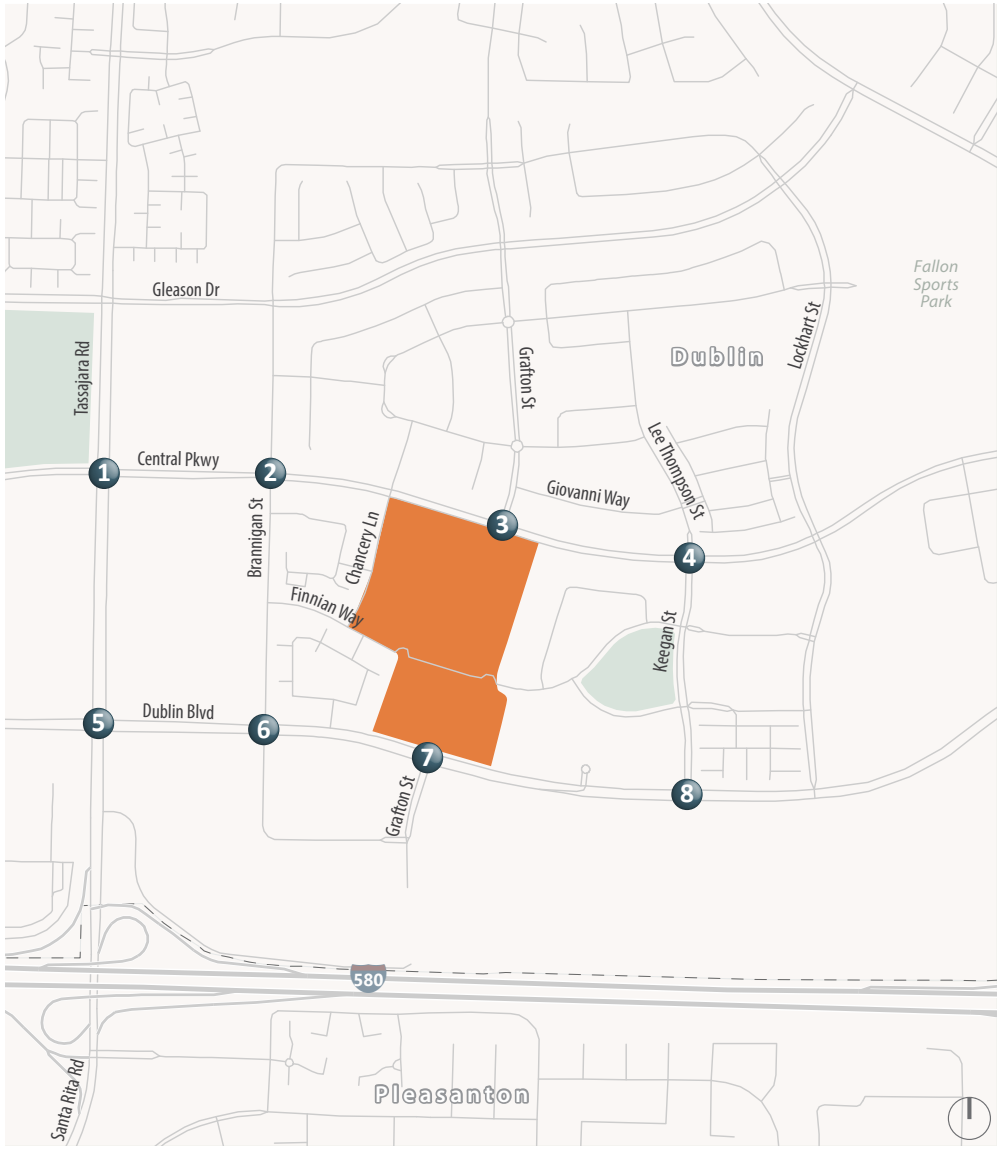
Stop Sign

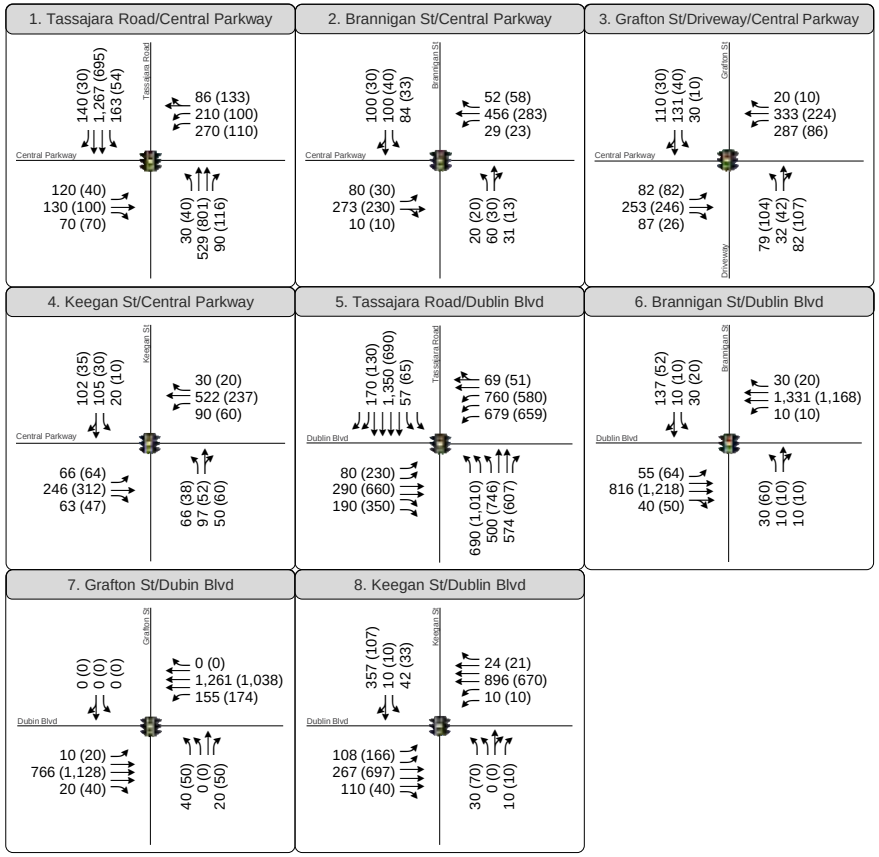
Project Site

City Study Intersection from City's NOP Letter

Figure 9b

Near-term without Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

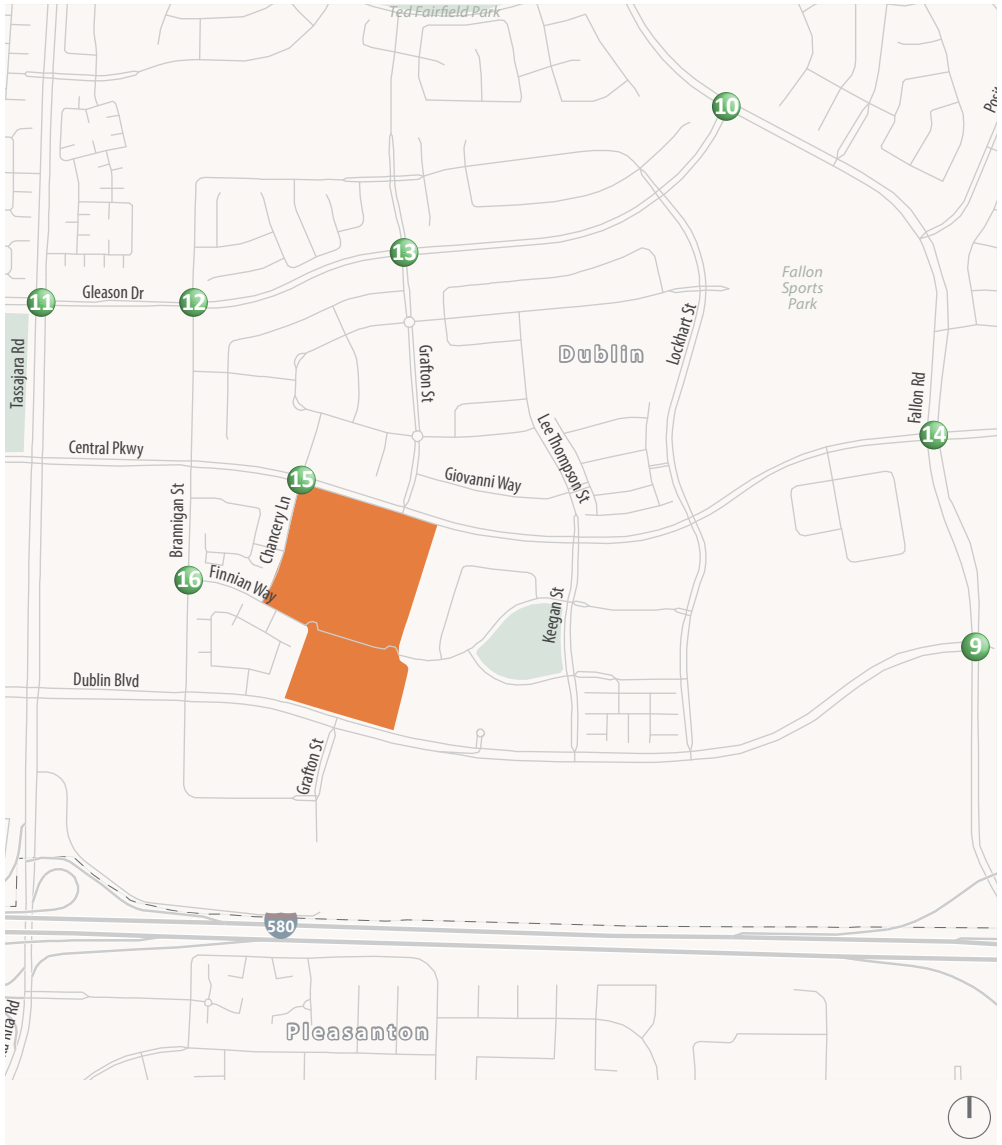
Signalized Intersection

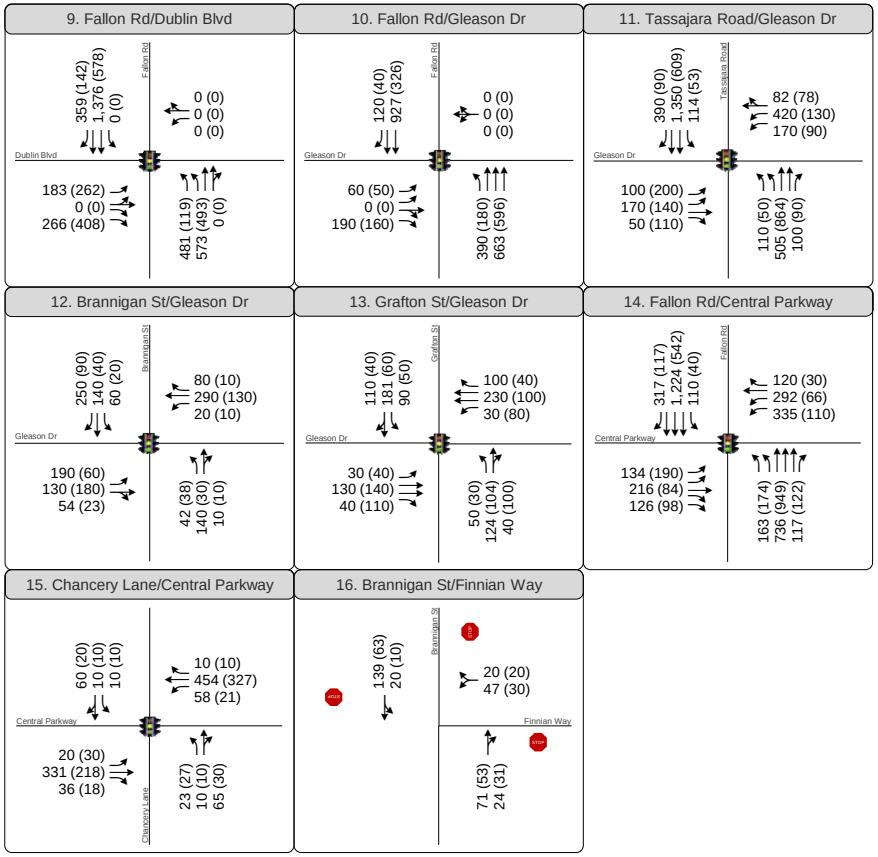
Project Site

Original Scope Study Intersection

Figure 10a

Near-term with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

City Study Intersection from City's NOP Letter

Figure 10b

Near-term with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

Table 10: Near-Term Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Near-Term		Near-Term with Project	
			Delay[3]	LOS[3]	Delay[3]	LOS[3]
1. Central Parkway/ Tassajara Road	Signal	AM PM	35.9 24.0	D C	40.4 28.7	D C
2. Central Parkway/ Brannigan Street	Signal	AM PM	19.8 13.1	B B	22.6 14.2	C B
3. Central Parkway/ Grafton Street	Signal	AM PM	9.4 6.4	A A	25.1 15.2	C B
4. Central Parkway / Keegan Street	Signal	AM PM	20.7 15.5	C B	51.2 17.7	D B
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	53.1 **(1.12/1.56)**	D **F**	53.8 **(1.14/1.56)**	D **F**
6. Dublin Boulevard/ Brannigan Street	Signal	AM PM	10.2 12.8	B B	10.7 13.5	B B
7. Dublin Boulevard/ Grafton Street	Signal	AM PM	9.5 11.5	A B	7.6 10.6	A B
8. Dublin Boulevard/ Keegan Street	Signal	AM PM	16.5 16.5	B B	17.2 16.9	B B
9. Dublin Boulevard/ Fallon Road	Signal	AM PM	24.1 14.3	C B	25.5 15.0	C B
10. Fallon Drive / Gleason Drive	Signal	AM PM	18.0 8.4	B A	19.3 8.3	B A
11. Tassajara Road / Gleason Drive	Signal	AM PM	49.2 31.2	D C	**<u>65.0 (87.7)</u>** 33.2	**<u>E (F)</u>** C
12. Brannigan Street / Gleason Drive	Signal	AM PM	33.5 14.3	C B	33.5 14.9	C B
13. Grafton Street / Gleason Drive	Signal	AM PM	20.4 20.5	C C	21.1 22.7	C C
14. Central Parkway / Fallon Road	Signal	AM PM	34.9 22.6	C C	42.4 24.2	D C
15. Central Parkway / Chancery Lane	Signal	AM PM	12.3 11.5	B B	13.3 12.6	B B
16. Brannigan Street / Finnian Way	AWSC	AM PM	8.3 7.6	A A	8.5 7.8	A A

Notes: **Bold** text indicates unacceptable operations; **<u>Bold Underline</u>** text indicates policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Vehicle Queues

Based on the information provided in Attachment C, the addition of Project traffic would potential result in vehicle queues exceeding the available storage, or would increase vehicle queues by more than 25 feet (one vehicle) for movements where the queue already exceed the available storage for the following movements, as illustrated in **Table 11**:

- Central Parkway at Brannigan Street – southbound left-turn (storage capacity of 125-feet) increase from 75 to 175 feet in the morning peak hour.
- Central Parkway at Grafton Street/Project Driveway – westbound left-turn (storage capacity of 275-feet) increase from 25 to 350 feet in the morning peak hour.
- Tassajara Road at Dublin Boulevard – Northbound right-turn (storage capacity of 250-feet) increase from 375 to 400 feet in the morning peak hour.

Table 11: Near-Term with Project Conditions 95th Percentile Queue Summary

Intersection	Movement	Storage Length (ft)[1]	AM Peak Period		PM Peak Period	
			Without Project	With Project	Without Project	With Project
2. Central Parkway / Brannigan Street	SBL	100	75	**175**	50	75
3. Central Parkway / Grafton Street	WBL	275	25	**350**	0	100
5. Dublin Boulevard / Tassajara Road	NBL	325	325	325	**675**	**675**
	NBR	250	100	100	**375**	**400**
10. Fallon Drive / Gleason Drive	NBL	175	**625**	**625**	**250**	**250**
12. Brannigan Street / Gleason Drive	EBL	175	**225**	**225**	75	75

Notes:
1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

Near-Term Conditions Intersection Policy Violations and Recommended Improvements

This section evaluates the intersection LOS presented in Table 10 by comparing the results with the established LOS policies and presents recommended improvements for the identified violations. The updated LOS results are presented in **Table 12** and updated queue results are presented in **Table 13**.

Policy Exceedance 2: Intersection 11, Tassajara Road at Gleason Drive (City of Dublin, TVTC)

City of Dublin Standard: This intersection is projected to operate at LOS D during the AM peak hour in the near-term condition prior to the addition of Project traffic. The Project would degrade the LOS to E with the addition of Project traffic. This is considered a violation of the City's LOS policies.

TVTC Standard: This intersection is projected to operate at LOS E or better prior to the addition of Project traffic during both peak hours, and its operations would remain at LOS E or better with the addition of project traffic. This is not considered to be a violation of the TVTC LOS policies.

Recommended Improvement 2: Tassajara Road at Gleason Drive

> The reconstruction of the southbound approach to provide a third southbound through lane and a third receiving lane on the south side of the intersection would eliminate this policy violation. Implementation of this improvement would result in LOS D operations, improving the operation to be in line with City LOS policies.

Policy Exceedance 3: **Vehicle Queues.** The project would potentially result in left-turn vehicle queues exceeding the available storage or would increase left-turn vehicles by more than 25 feet (1 vehicle) for at least one movement where the left-turn vehicle queue is projected to already exceed the available storage at the following intersections:

- Central Parkway at Brannigan Street – southbound left-turn in the AM peak hour
- Central Parkway at Grafton Street/Project Driveway – westbound left-turn in the AM peak hour
- Tassajara Road at Dublin Boulevard – northbound right-turn in the AM peak hour.

Recommended Improvement 3a: Intersection 2, Central Parkway at Brannigan Street

> Retiming of the signal to allow additional green time for the southbound left-turn movement, in addition to increasing the southbound left turn pocket by 50 feet for a storage of 150 feet would eliminate this policy violation. Implementation of these measures would reduce the queue spillback within the storage capacity.

Recommended Improvement 3b: Intersection 3, Central Parkway at Grafton Street

> Implement recommended improvement 1. Implementing this measure would reduce the queue spillback to an acceptable level.

Recommended Improvement 3c: Intersection 5, Tassajara Road at Dublin Boulevard

> Implementing a northbound right-turn overlap phase and retiming of the signal to allow additional green time for the northbound right-turn would eliminate this policy violation. Implementation of these measures would reduce the queue spillback within the storage.

Table 12: Near-Term Conditions with Recommendations Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Near-Term		Near-Term with Project		Near-Term with Project with Rec	
			Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS
2. Central Parkway/ Brannigan Street	Signal	AM PM	19.8 13.1	B B	22.6 14.2	C B	22.3 14.2	C B
3. Central Parkway/ Grafton Street	Signal	AM PM	9.4 6.4	A A	25.1 15.2	C B	33.7 20.5	C C
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	53.1 **(1.12/1.56)**	D **F**	53.8 **(1.14/1.56)**	D **F**	53.1 **(1.13/1.57)**	D **F**
11. Tassajara Road / Gleason Drive	Signal	AM PM	49.2 31.2	D C	**<u>65.0 (87.7)</u>** 33.2	**<u>E (F)</u>** C	**53.1 (77.3)** 32.6	**E (F)** C

Notes: **Bold** text indicates unacceptable operations; **<u>Bold Underline</u>** text indicates a violation of policy resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Table 13: Near-Term Conditions with Recommendations 95th Percentile Queue Summary

Intersection	Movement	New Storage Length (ft)[1]	AM Peak Period			PM Peak Period		
			Without Project	With Project	With Rec	Without Project	With Project	With Rec
4. Central Parkway / Brannigan Street	SBL	150	75	**<u>175</u>**	150	50	75	75
5. Central Parkway / Grafton Street	WBL	350	25	**<u>350</u>**	**350**	0	100	125
5. Dublin Boulevard / Tassajara Road	NBR	250	100	100	100	**375**	**<u>400</u>**	**375**

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

6. Cumulative Traffic Conditions

This section discusses Cumulative traffic conditions both without and with the Project. The future conditions analysis considers development within the City of Dublin as described in the General Plan.

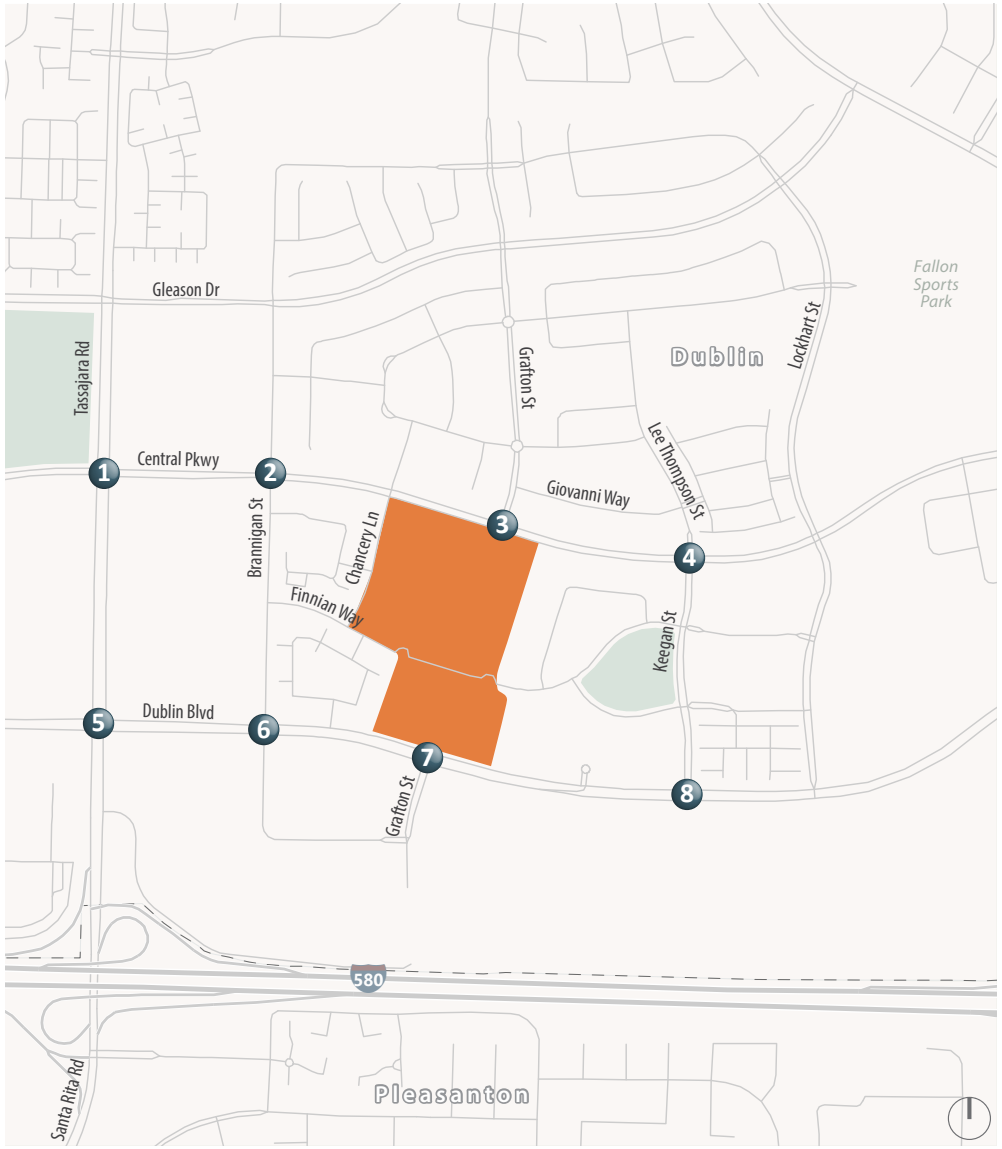
Cumulative Traffic Forecasts and Roadway Improvements

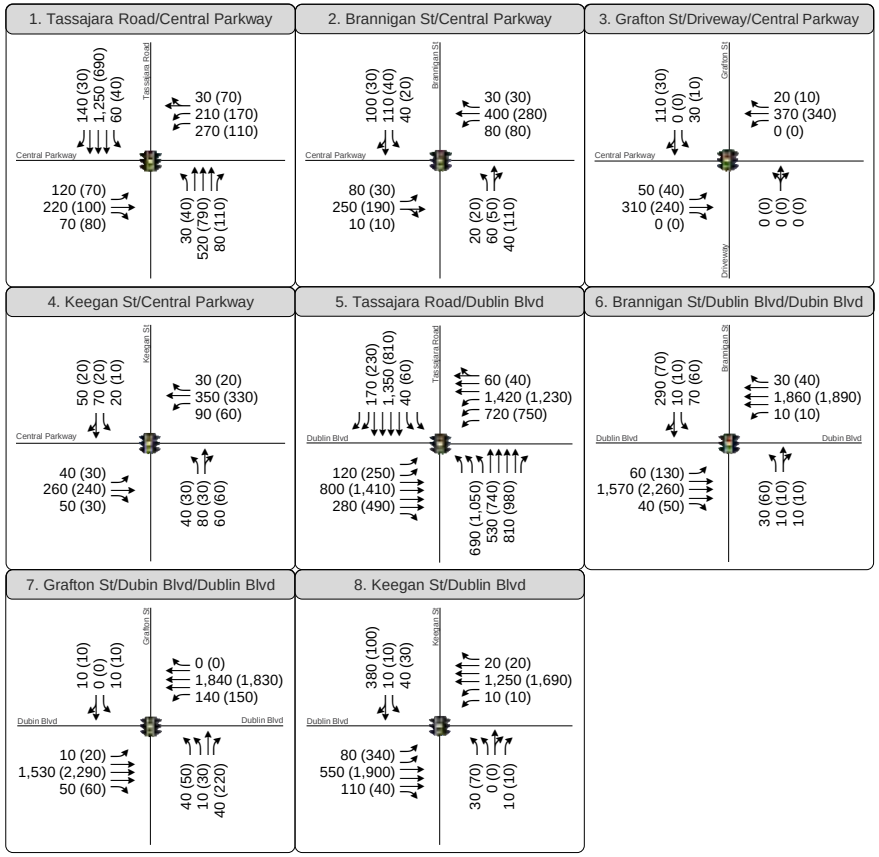
To assess future growth with planned development in the City of Dublin, several sources of data were reviewed, including the City of Dublin travel demand model, and the traffic growth trends as described in the Dublin General Plan. Traffic forecasts within the immediate study area were reviewed to ensure that known developments were adequately reflected in the forecasts. Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area. The traffic forecasts also reflect traffic shifts that could occur with construction of new regional roadway facilities such as the extension of Dublin Boulevard east to North Canyons Parkway. Improvements at intersections along Dublin Boulevard and Fallon Road were assumed to have been constructed, as development on parcels adjacent to intersections that have not yet been constructed to their ultimate configuration is reflected in the forecasts. Intersection improvements were assumed at the following intersections:

- Tassajara Road at Gleason Drive; improvements consistent with the Eastern Dublin TIF
- Tassajara Road at Central Parkway; improvements consistent with the Eastern Dublin TIF
- Tassajara Road at Dublin Boulevard; improvements consistent with the Eastern Dublin TIF
- Fallon Road at Dublin Boulevard; improvements consistent with the Eastern Dublin TIF
- Brannigan Street at Dublin Boulevard; improvements consistent with the Eastern Dublin TIF

The resulting Cumulative without Project forecasts and lane configurations are presented on **Figure 11a** and **11b**, which are representative of conditions over the next 20 to 25 years. The Project volumes from Figure 7a and 7b were added to the Cumulative without Project traffic volumes to represent Cumulative with Project conditions, as presented on **Figure 19a** and **12b**.

Heavy vehicle percentages and pedestrian and bicycle activity at the study intersections were left unchanged from existing conditions. Traffic signal timing was optimized at intersections where the initial analysis indicated LOS E or F operations, reflecting that as part of Dublin's continuing maintenance of traffic signals, signal timing for intersections near capacity are regularly updated to better accommodate actual travel demand.





XX (YY) AM (PM) Peak Hour Traffic Volumes

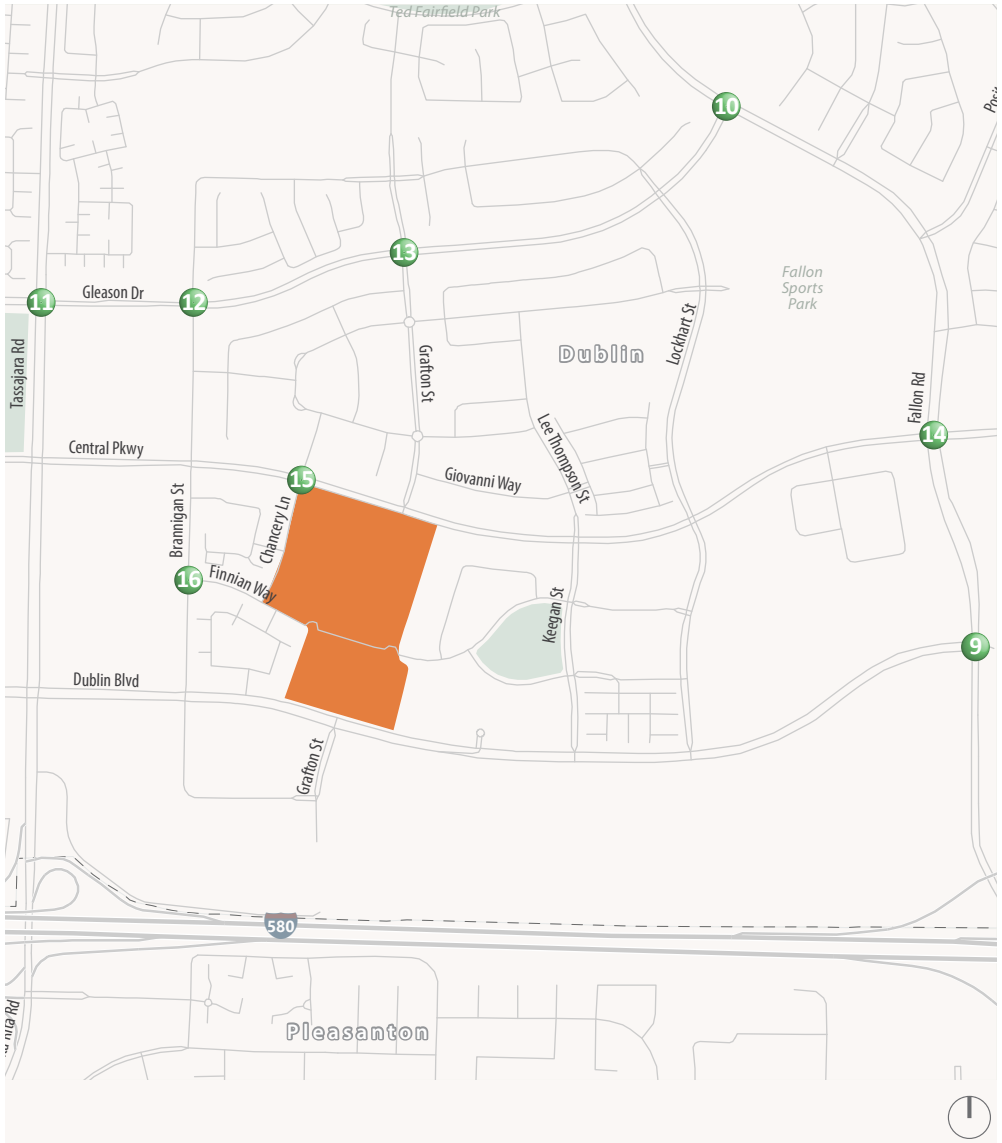
Signalized Intersection

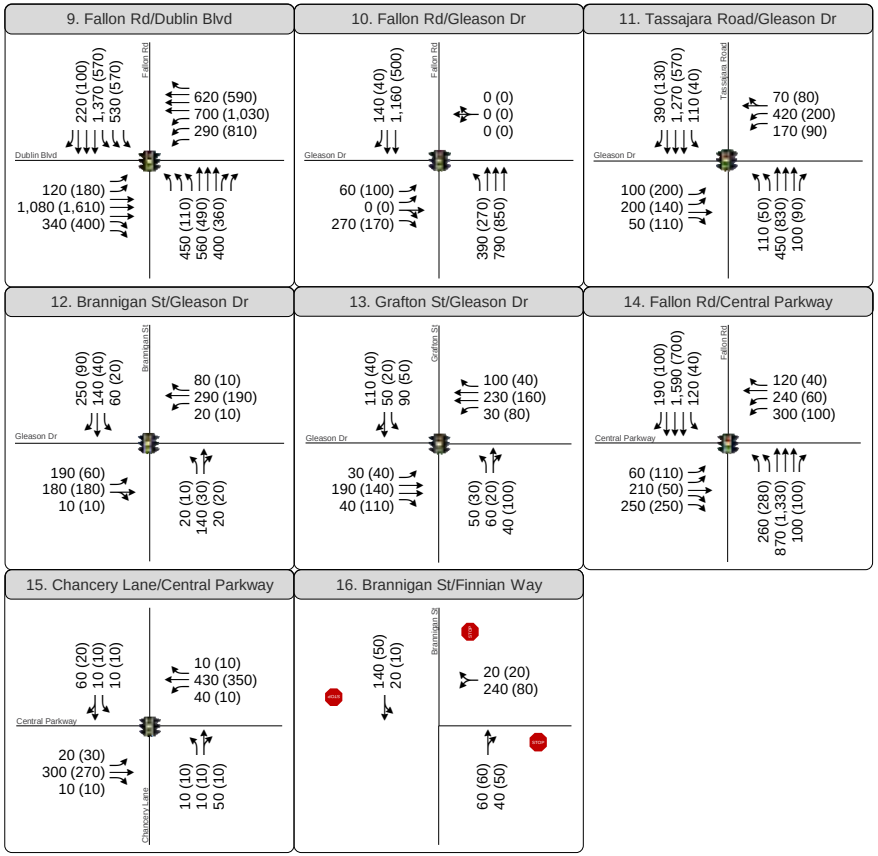
Project Site

Original Scope Study Intersection

Figure 11a

Cumulative without Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

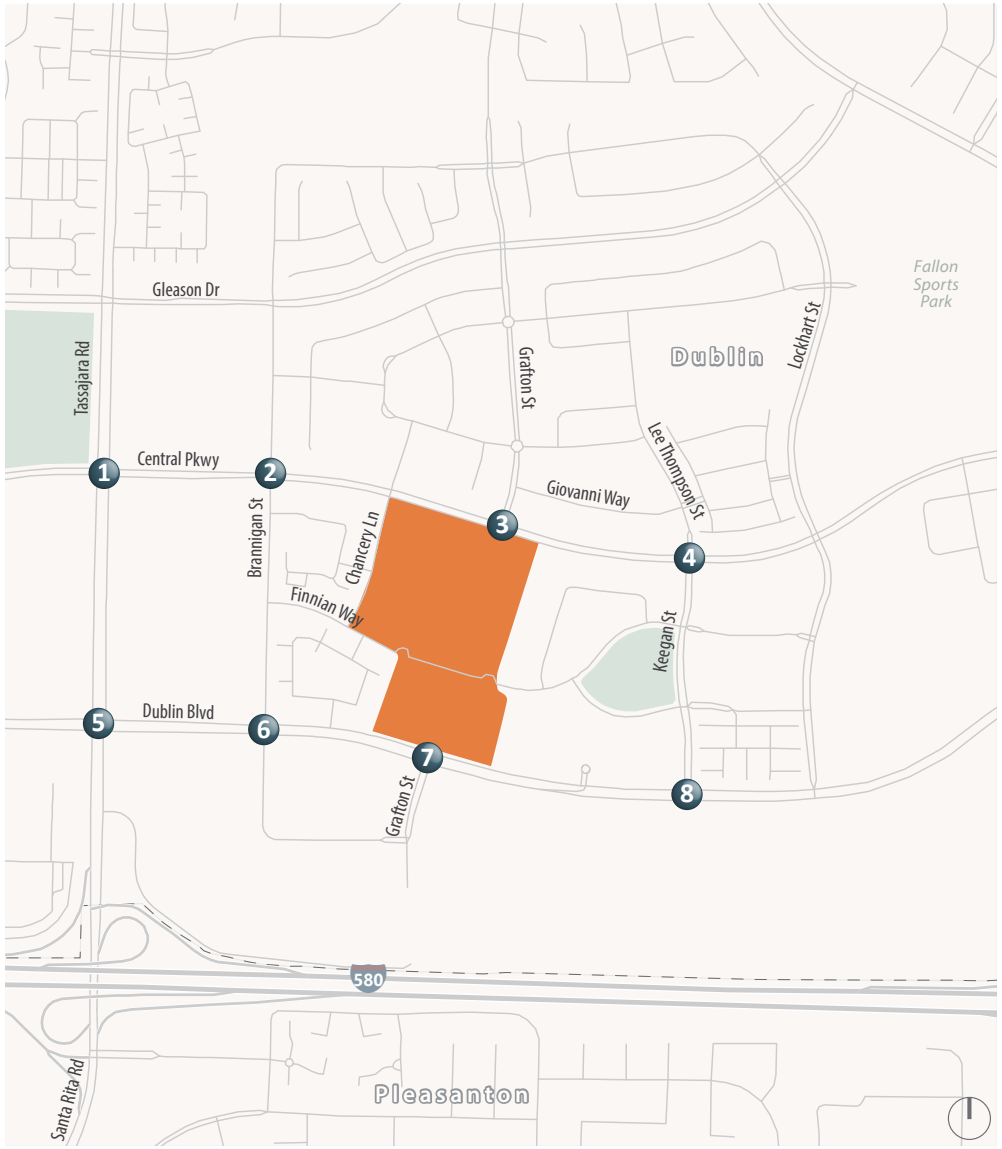
Stop Sign

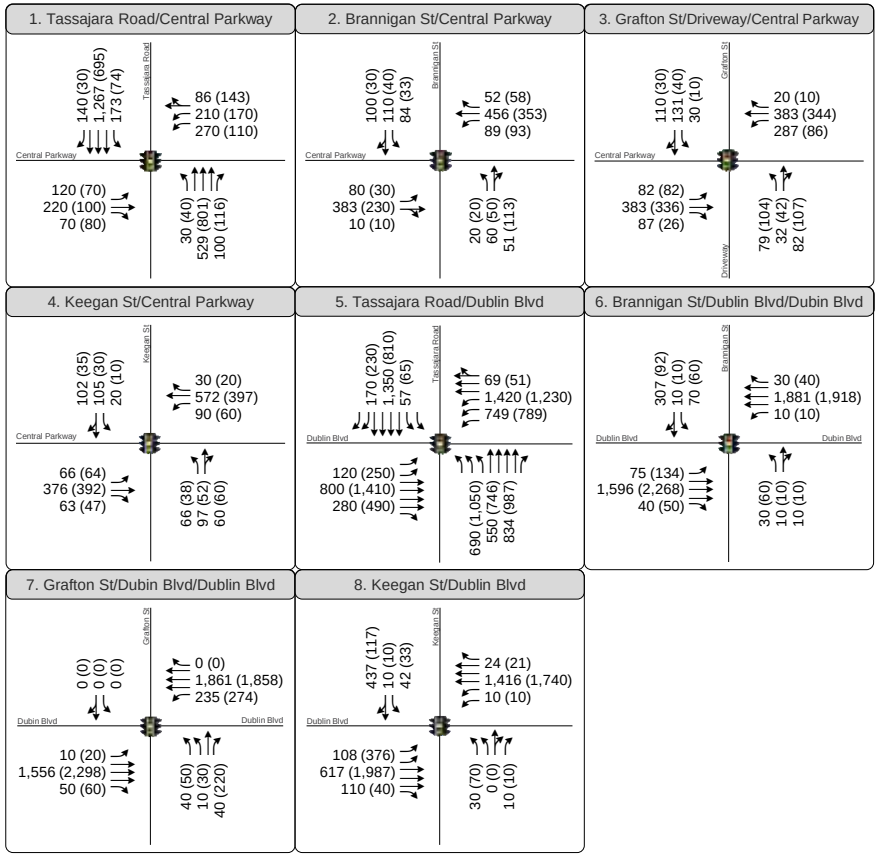
Project Site

City Study Intersection from City's NOP Letter

Figure 11b

Cumulative without Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

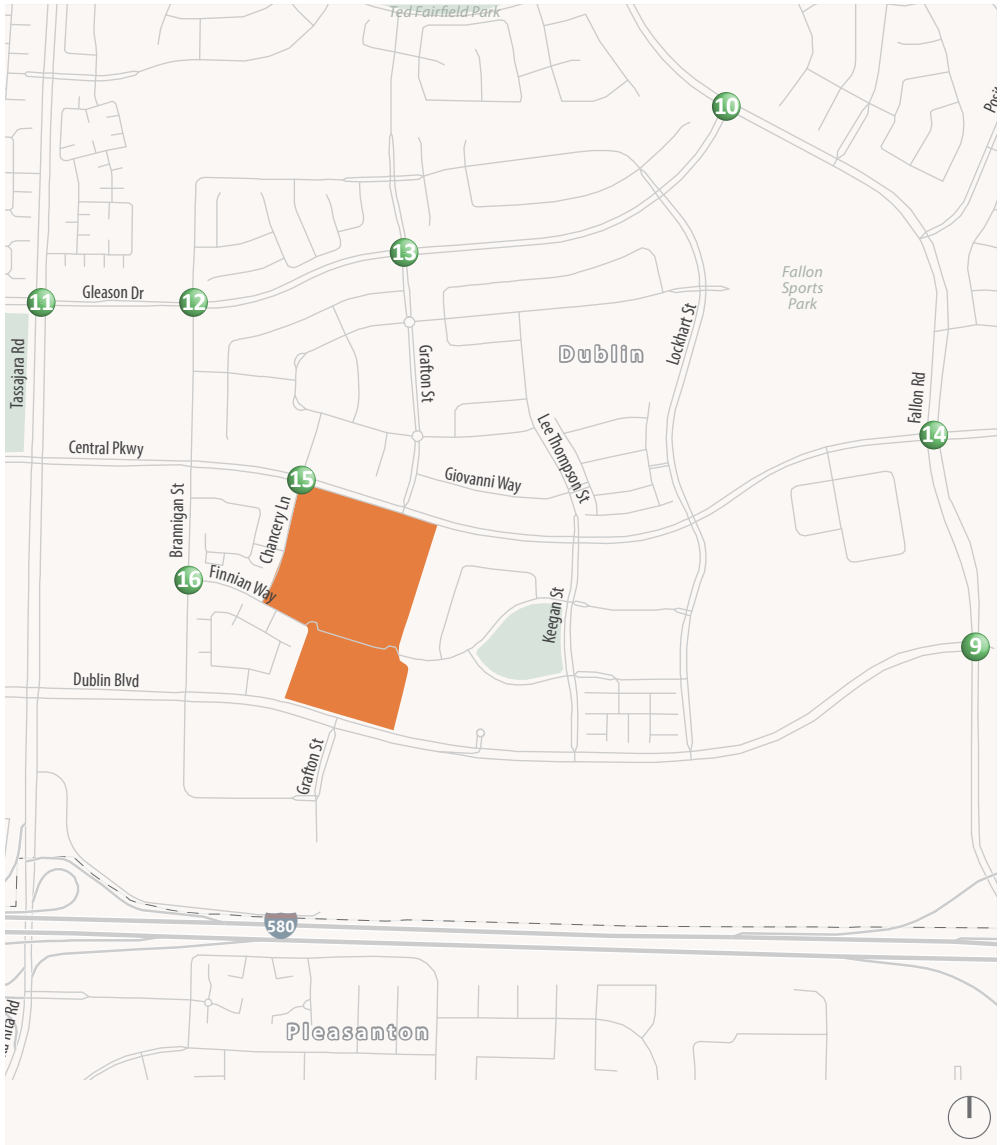
Signalized Intersection

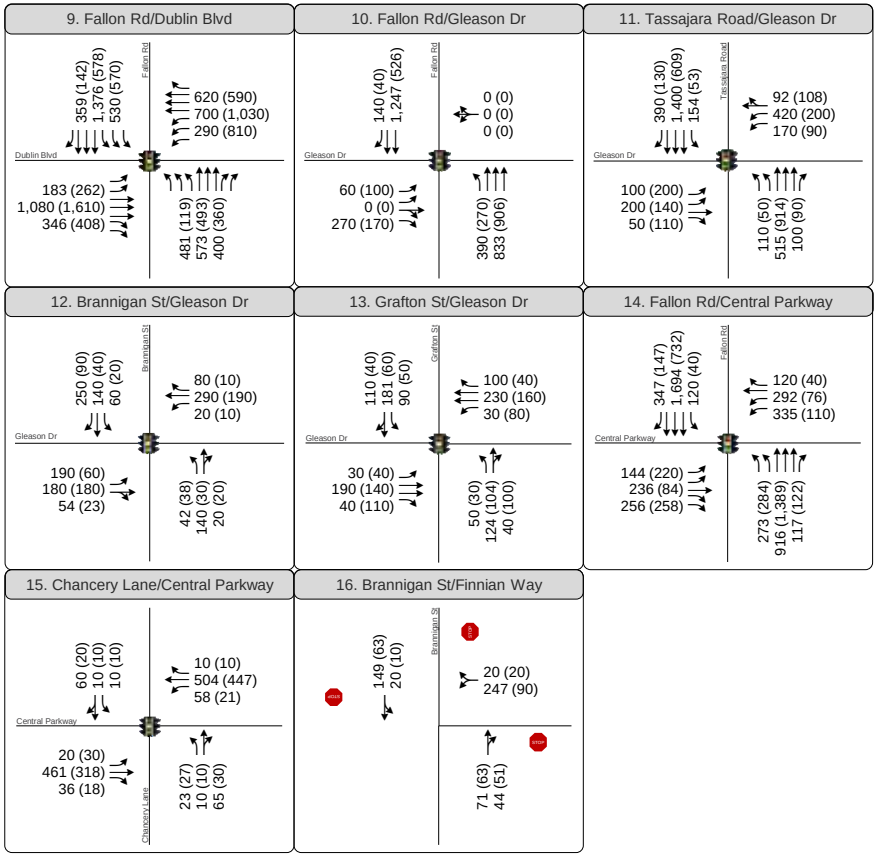
Project Site

Original Scope Study Intersection

Figure 12a

Cumulative with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls





XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Project Site

City Study Intersection from City's NOP Letter

Figure 12b

Cumulative with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

Analysis of Cumulative Conditions

Intersection Operations

Levels of service calculations were conducted to evaluate intersection operations under Cumulative conditions both without and with the Project. The LOS results are summarized in **Table 14**. The corresponding LOS calculation sheets are included in **Attachment B**. The results of the LOS calculations indicate that with planned development and anticipated growth in Dublin and adjacent jurisdictions in the cumulative condition, the following intersections operate at LOS E or F prior to the addition of Project traffic:

- Dublin Boulevard at Tassajara Road (LOS E, AM peak and LOS F, PM peak)
- Dublin Boulevard at Grafton Street (LOS E, PM peak)
- Dublin Boulevard at Fallon Road (LOS F, PM peak)
- Central Parkway at Fallon Road (LOS E, AM peak)

The addition of Project traffic is expected to worsen the operation of the above intersections and would result in Central Parkway at Keegan Street degrading below LOS D. All other study intersections would continue to operate at acceptable service levels based on the City of Dublin level of service policies in the cumulative condition with the addition of Project traffic.

Table 14: Cumulative Conditions Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Cumulative		Cumulative with Project	
			Delay[3]	LOS	Delay[3]	LOS
1. Central Parkway/ Tassajara Road	Signal	AM PM	33.9 29.5	C C	44.5 35.2	D D
2. Central Parkway/ Brannigan Street	Signal	AM PM	20.6 17.1	C B	24.6 17.2	C B
3. Central Parkway/ Grafton Street	Signal	AM PM	7.9 6.5	A A	31.7 20.7	D C
4. Central Parkway / Keegan Street	Signal	AM PM	22.0 16.5	C B	**<u>66.8</u>** 20.3	**<u>E</u>** C
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	**64.0 (95.0)** **(1.59/2.05)**	**E (F)** **F**	**66.8 (96.9)** **(1.61/2.08)**	**E (F)** **F**
6. Dublin Boulevard/ Brannigan Street	Signal	AM PM	19.5 19.5	B B	21.7 20.1	C C
7. Dublin Boulevard/ Grafton Street	Signal	AM PM	12.8 **64.5 (176.2)**	B **E (F)**	14.7 **<u>71.5 (525.8)</u>**	B **<u>E (F)</u>**
8. Dublin Boulevard/ Keegan Street	Signal	AM PM	16.7 28.3	B C	18.0 32.8	B C
9. Dublin Boulevard/ Fallon Road	Signal	AM PM	46.6 **(1.17/1.39)**	D **F**	48.8 **(1.17/1.39)**	D **F**
10. Fallon Drive / Gleason Drive	Signal	AM PM	26.8 11.3	C B	28.8 11.4	C B
11. Tassajara Road / Gleason Drive	Signal	AM PM	41.7 34.0	D C	45.0 36.1	D D
12. Brannigan Street / Gleason Drive	Signal	AM PM	33.5 14.6	C B	33.5 15.2	C B
13. Grafton Street / Gleason Drive	Signal	AM PM	20.4 20.1	C C	21.1 23.1	C C
14. Central Parkway / Fallon Road	Signal	AM PM	**65.6 (111.4)** 26.6	**E (F)** C	**<u>79.9 (149.5)</u>** 30.1	**<u>E (F)</u>** C
15. Central Parkway / Chancery Lane	Signal	AM PM	12.6 11.8	B B	15.4 15.1	B B
16. Brannigan Street / Finnian Way	AWSC	AM PM	11.0 8.4	B A	11.4 8.6	B A

Notes: **Bold** text indicates unacceptable operations; **<u>Bold Underline</u>** text indicates a policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Vehicle Queues

The addition of Project traffic is expected to increase vehicle turn queues at six study intersection, as illustrated in **Table 15**. Based on the information provided in Attachment C, the addition of Project traffic would potentially result in vehicle queues exceeding the available storage, or would increase vehicle queues by more than 25 feet (one vehicle) for movements where the queue already exceeds the available storage for the following movements:

- Tassajara Road at Central Parkway – southbound left-turn (storage capacity of 275-feet) increases from 125 to 375 feet in the morning peak hour.
- Brannigan Street at Central Parkway – southbound left-turn (storage capacity of 100-feet) increases from 75 to 175 feet in the morning peak hour.
- Driveway at Grafton Street and Central Parkway – westbound left-turn 325-feet queue exceeds 275-feet storage capacity in the morning peak hour.
- Tassajara Road at Dublin Boulevard – westbound left-turn (storage capacity of 350-feet) increases from 425 to 475 feet in the evening peak hour; northbound right-turn (storage capacity of 250) increases from 775 to 875 feet in the morning peak hour and from 1,425 to 1,475 feet in the evening peak hour.
- Grafton Street at Dublin Boulevard – westbound left-turn 650-feet queue exceeds the 350-feet storage capacity in the evening peak hour.
- Keegan Street at Dublin Boulevard – eastbound left-turn 325-feet queue exceeds 275-feet storage capacity in the evening peak hour.

Table 15: Cumulative Conditions 95th Percentile Queue Summary

Intersection	Movement	Storage Length (ft)[1]	AM Peak Period		PM Peak Period	
			Without Project	With Project	Without Project	With Project
1. Tassajara Road / Central Parkway	SBL	275	125	**375**	75	125
2. Brannigan Street / Central Parkway	SBL	100	75	**175**	50	75
3. Driveway-Grafton Street / Central Parkway	WBL	275	0	**325**	0	100
5. Tassajara Road / Dublin Boulevard	EBR	225	**275**	**275**	**600**	**600**
	WBL	350	350	350	**425**	**475**
	NBL	325	325	325	**700**	**700**
	NBR	250	**775**	**875**	**1425**	**1475**
6. Brannigan Street / Dublin Boulevard	SBL	150	**175**	**175**	150	150
7. Grafton Street / Dublin Boulevard	WBL	350	175	350	325	**650**
8. Keegan Street / Dublin Boulevard	EBL	275	75	100	275	**325**
9. Fallon Road / Dublin Boulevard	WBR	475	**600**	**600**	350	375
10. Fallon Road / Gleason Drive	NBL	175	**700**	**700**	**350**	**350**
12. Brannigan Street / Gleason Drive	EBL	175	**225**	**225**	75	75
14. Fallon Road / Central Parkway	WBL	225	**300**	**300**	100	100

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

Cumulative Conditions Policy Violations and Recommendations

This section evaluates the intersection LOS results presented in Table 14 and compares the results with the established policies. Where violations of the policies are noted, recommendations are proposed, with updated LOS results presented in **Table 16** and queue results presented in **Table 17**.

Policy Exceedance 4: Intersection 4, Central Parkway at Keegan Street (City of Dublin, TVTC)

City of Dublin Standard: This intersection is projected to operate at LOS C during the AM peak hour in the cumulative condition prior to the addition of Project traffic. The addition of Project traffic would degrade the LOS to E. This would be in violation of the City of Dublin's Level of Service policies.

TVTC Standard: This intersection is projected to operate at LOS C during the AM peak hour in the cumulative condition prior to the addition of Project traffic. The intersection would operate at LOS E with the addition of Project traffic. This change is not in violation of the TVTC LOS standards.

Recommended Improvement 4: Central Parkway at Keegan Street

The retiming of the traffic signal to allow for more green time on the eastbound through movement would eliminate this violation. Implementing this measure would improve the LOS to operate within the City's LOS policy.

Policy Exceedance 5: Intersection 7, Dublin Boulevard at Grafton Street (City of Dublin, TVTC)

City of Dublin Standard: This intersection is projected to operate at LOS E during the PM peak hour in the cumulative condition prior to the addition of Project traffic. The addition of Project traffic would increase vehicular delay by 6 or more seconds for the intersection as a whole and for critical movements. This is a violation of the City's LOS policies.

TVTC Standard: This intersection is projected to operate at LOS E during the PM peak hour in the cumulative condition prior to the addition of Project traffic. The intersection would operate at LOS E with the addition of Project traffic. This is not in violation of the TVTC LOS standards.

Policy Exceedance 6: Intersection 14, Central Parkway at Fallon Road (City of Dublin, TVTC)

City of Dublin Standard: This intersection is projected to operate at LOS E during the AM peak hour in the cumulative condition prior to the addition of Project traffic. With the addition of Project generated traffic the LOS would remain at E; however, the overall intersection delay would increase by 14.3 seconds and the worst movement delay would increase by 38.1 seconds. The changes are a violation of the City's LOS policies.

TVTC Standard: This intersection is projected to operate at LOS E during the AM peak hour in the cumulative condition prior to the addition of Project traffic. With the addition of Project generated traffic the intersection's LOS would remain at E, which is not a violation of the TVTC LOS standards.

Recommended Improvement 6: Central Parkway at Fallon Road

The modification of the southbound approach to have four through lanes and a southbound right overlap phase would eliminate this policy violation. Construction of this improvement would improve intersection operations better than no Project conditions, improving the LOS and delay to an acceptable level.

Policy Exceedance 7: The project would potentially result in left-turn vehicle queues exceeding the available storage or would increase left-turn vehicles by more than 25 feet (1 vehicle) for at least one movement where the left-turn vehicle queue is projected to already exceed the available storage at the following intersections:

- Tassajara Road at Central Parkway - southbound left-turn in the AM peak hour

- Central Parkway at Brannigan Street - southbound left-turn in the AM peak hour
- Central Parkway at Grafton Street – westbound left-turn in the AM peak hour
- Tassajara Road at Dublin Boulevard - northbound right-turn in the AM and PM peak hour, westbound left in the PM peak hour
- Dublin Boulevard at Grafton Street – westbound left-turn in the PM peak hour
- Dublin Boulevard at Keegan Street – eastbound left-turn in the PM peak hour

These changes are a violation of the City's policies on left turn queues.

Recommended Improvement 8a: Intersection 1, Tassajara Road at Central Parkway

Retiming the signal to allow additional green time for the southbound left-turn movement would eliminate this policy violation. Implementation of this measure would reduce the queue spillback within the storage capacity.

Recommended Improvement 8b: Intersection 2, Central Parkway at Brannigan Street

Implement recommended improvement 3a. Implementation of this measure would reduce the queue spillback within the storage capacity.

Recommended Improvement 8c: Intersection 3, Central Parkway at Grafton Street

Implement recommended improvement 1. Implementing this measure would reduce the queue spillback to an acceptable level.

Recommended Improvement 8d: Intersection 5, Tassajara Road at Dublin Boulevard

Implement recommended improvement 3c - retiming of the signal to allow additional green time for the westbound left-turn movement. Implementation of this measure would reduce the queue spillback within the storage capacity.

Recommended Improvement 8e: Intersection 7: Dublin Boulevard at Grafton Street

Implement recommended improvement 5. Implementation of this measure would reduce the queue spillback within the storage capacity.

Recommended Improvement 8f: Intersection 8: Dublin Boulevard at Keegan Street

The extension the eastbound left-turn pocket by 50 feet would eliminate this policy violation. With the implementation of this measure, the left turn pocket would accommodate the additional forecast queue length.

Table 16: Cumulative Conditions with Recommendations Peak Hour Intersection LOS Summary

Intersection	Control[1]	Peak Hour[2]	Cumulative		Cumulative with Project		Cumulative with Project Mitigated	
			Delay[3]	LOS	Delay[3]	LOS	Delay[3]	LOS
1. Central Parkway/ Tassajara Road	Signal	AM PM	33.9 29.5	C C	44.5 35.2	D D	38.2 35.2	D D
2. Central Parkway/ Brannigan Street	Signal	AM PM	20.6 17.1	C B	24.6 17.2	C B	24.2 20.1	C C
3. Central Parkway/ Grafton Street	Signal	AM PM	7.9 6.5	A A	31.7 20.7	D C	45.4 22.0	D C
4. Central Parkway / Keegan Street	Signal	AM PM	22.0 16.5	C B	**<u>66.8</u>** 20.3	**<u>E</u>** C	43.8 20.3	D C
5. Dublin Boulevard/ Tassajara Road	Signal	AM PM	**64.0 (95.0)** **(1.59/2.05)**	**E (F)** **F**	**66.8 (96.9)** **(1.61/2.08)**	**E (F)** **F**	**60.9 (96.9)** **(1.51/1.67)**	**E (F)** **F**
7. Dublin Boulevard/ Grafton Street	Signal	AM PM	12.8 **64.5 (176.2)**	B **E (F)**	14.7 **<u>71.5 (525.8)</u>**	B **<u>E (F)</u>**	9.1 **59.1 (147.8)**	A **E (F)**
8. Dublin Boulevard/ Keegan Street	Signal	AM PM	16.7 28.3	B C	18.0 32.8	B C	18.0 32.8	B C
14. Central Parkway / Fallon Road	Signal	AM PM	**65.6 (111.4)** 26.6	**E (F)** C	**<u>79.9 (149.5)</u>** 30.1	**<u>E (F)</u>** C	**55.5 (124.3)** 29.8	**E (F)** C

Notes: **Bold** text indicates unacceptable operations; **<u>Bold Underline</u>** text indicates a policy violation resulting from Project-related traffic.

1. Existing intersection traffic control type (Signal = Signalized; AWSC = All-Way Stop-Controlled)
2. AM = Weekday morning peak hour, PM = Weekday evening peak hour
3. Whole intersection average delay reported for signalized and all-way stop-controlled intersections. Delay calculated per HCM 2010 methodologies.
   For LOS E signalized and all-way stop-controlled intersections, average delay is followed by critical movement delay for the in parentheses.
   For LOS F signalized and all-way stop-controlled intersections, overall intersection delay is followed by volume-to-capacity (v/c) ratio and the worst movement v/c ratio in parentheses. V/C ratios are calculated using HCM 2000 methodologies.

Source: Fehr & Peers, June 2020.

Table 17: Cumulative Conditions with Recommendation 95th Percentile Queue Summary

Intersection	Movement	New Storage Length (ft)[1]	AM Peak Period			PM Peak Period		
			Without Project	With Project	With Mit	Without Project	With Project	With Mit
1. Tassajara Road / Central Parkway	SBL	275	125	**375**	250	75	125	125
2. Brannigan Street / Central Parkway	SBL	150	75	**175**	150	50	75	75
3. Driveway-Grafton Street / Central Parkway	WBL	350	0	**325**	325	0	100	125
5. Tassajara Road / Dublin Boulevard	WBL	350	350	350	350	**425**	**475**	**400**
	NBR	250	**775**	**875**	**775**	**1425**	**1,475**	**1,100**
7. Grafton Street / Dublin Boulevard	WBL	350	175	350	175	325	**650**	325
8. Keegan Street / Dublin Boulevard	EBL	325	75	100	100	275	**325**	325

Notes:

1. An additional 60 to 90 feet of storage is typically provided in the taper area outside of the through lane, which is not reflected in the storage length above.

Bold Underline indicates queue potentially extends beyond available storage and is considered a policy violation.
Source: Fehr & Peers, June 2020.

7. Alameda County Transportation Commission Roadway Analysis

The Alameda CTC requires the analysis of the Project's effects on Metropolitan Transportation System (MTS) roadways identified in the Congestion Management Plan (CMP) for development projects that would generate more than 100 net new PM peak hour trips. The Project would not generate more than 100 net new PM peak hour vehicle trips and thus the analysis is not required. As previously discussed, the Project would result in an overall decrease in vehicle trip making and VMT by providing a high school in an underserved area. If the Project were not to be developed, local students would travel further, with fewer walk and bicycle trips, to attend alternative high schools. The overall effect of the Project on the MTS roadway network would be a decrease in traffic levels on Dublin Boulevard, I-580 and other MTS roadway segments.

This completes our assessment of Levels of Service for the proposed Promenade High School Project in Dublin. Please call Mark or Bill at (925) 930-7100 with questions.

Attachments:

Attachment A: Counts
Attachment B: LOS Calculation Worksheets
Attachment C: Queue Calculation Worksheets

Attachment A: Counts

Prepared by National Data & Surveying Services

Tassajara Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-001
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

SOUTHBOUND (Tassajara Rd)

AM	129	1189	13	0	660	AM
NOON	0	0	0	0	0	NOON
PM	47	785	21	1	806	PM

Turn factors: 1 2 1 0

EASTBOUND (Central Pkwy)

AM	NOON	PM		
359	0	155		
19	0	1	0	
74	0	60	1	
97	0	128	1	
71	0	87	1	

WESTBOUND (Central Pkwy)

PM	NOON	AM	
21	0	23	0.5
69	0	185	0.5
126	0	261	2
0	0	0	0
288	0	186	

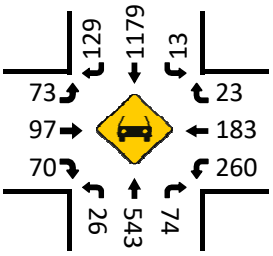
NORTHBOUND (Tassajara Rd)

PM	1013	15	38	724	139	PM
NOON	0	0	0	0	0	NOON
AM	1530	9	26	563	76	AM

Turn factors: 0 1 1 1

CONTROL			
Signalized			
TEV	2735	0	2262
	AM	NOON	PM
PHF	0.86		0.94

Cars (AM)



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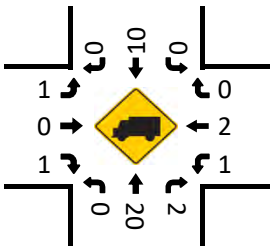

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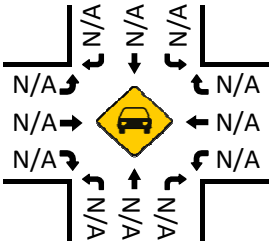

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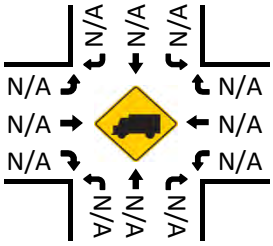

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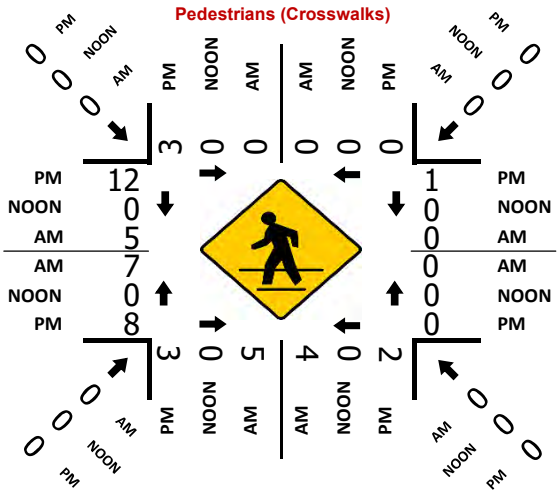

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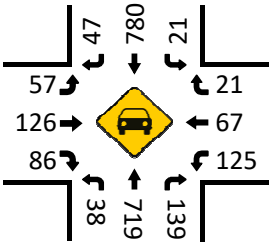

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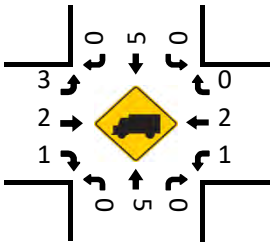


Prepared by National Data & Surveying Services

Brannigan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-002
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	87	89	16	0	167	AM
NOON	0	0	0	0	0	NOON
PM	23	26	7	0	71	PM
	0.5	0.5	1	0		

Central Pkwy — EASTBOUND

AM	NOON	PM	
468	0	217	
0	0	0	0
85	0	38	1
96	0	231	1
7	0	14	0
AM	NOON	PM	

Central Pkwy — WESTBOUND

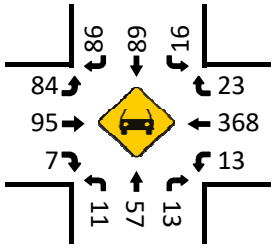
	PM	NOON	AM
1	6	0	25
1	184	0	370
1	6	0	13
0	1	0	1
	247	0	126
	PM	NOON	AM

Brannigan St — NORTHBOUND

PM	46	0	10	27	8	PM
NOON	0	0	0	0	0	NOON
AM	109	0	11	57	13	AM
		0	1	0.5	0.5	

CONTROL			
Signalized			
TEV	870	0	581
	AM	NOON	PM
PHF	0.73		0.83

Cars (AM)



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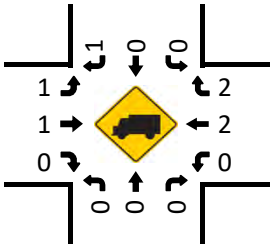

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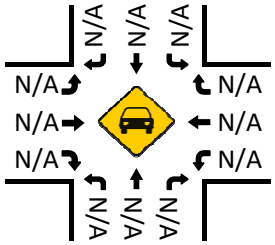

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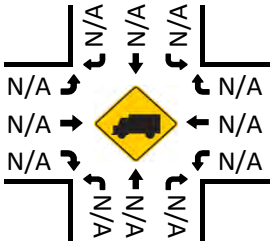

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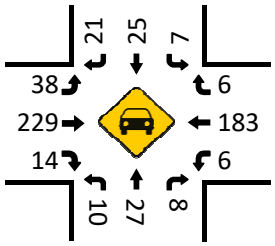

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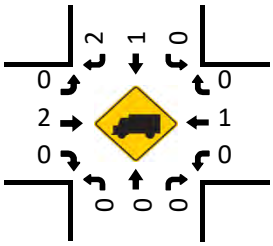
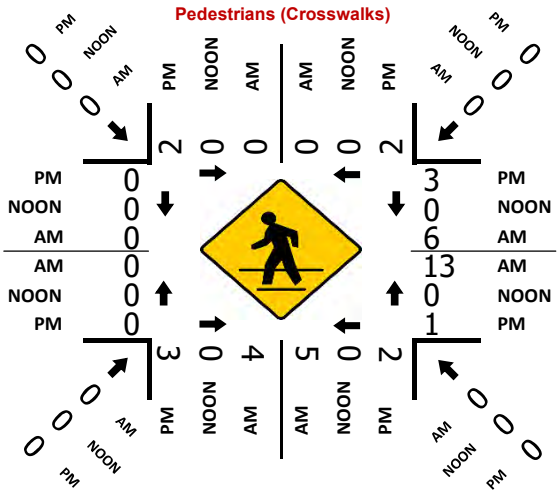


Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Grafton St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-003
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Grafton St)

AM	102	0	24	0	67	AM
NOON	0	0	0	0	0	NOON
PM	25	0	8	0	39	PM
	1	0	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
388	0	182	
0	0	3	0
45	0	37	1
109	0	169	1
0	0	0	1

WESTBOUND (Central Pkwy)

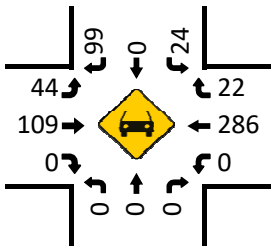
	PM	NOON	AM
1	2	0	22
1	154	0	286
1	0	0	0
0	0	0	8
	177	0	141

NORTHBOUND (Grafton St)

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
	0	0	0	0		

CONTROL			
Signalized			
TEV	596 AM	0 NOON	398 PM
PHF	0.76		0.80

Cars (AM)



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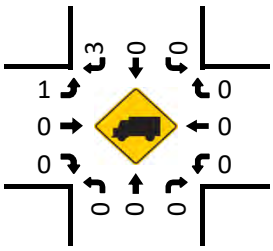

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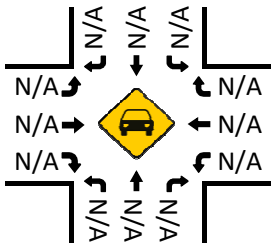
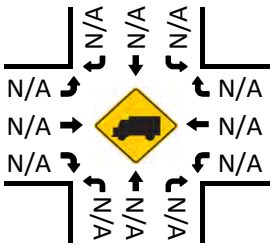
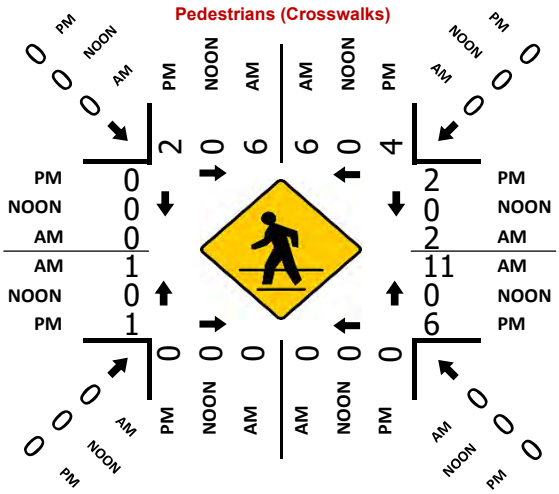


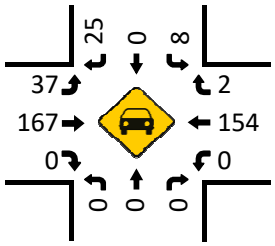
HT (NOON)



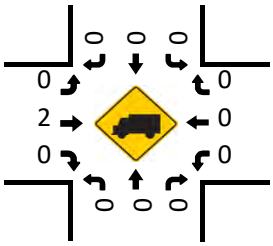
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Keegan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-004
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Keegan St)

AM	44	56	11	0	127	AM
NOON	0	0	0	0	0	NOON
PM	23	15	10	0	67	PM
	0.5	0.5	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
316	0	154	
0	0	0	0
28	0	31	1
79	0	115	1
33	0	26	1

WESTBOUND (Central Pkwy)

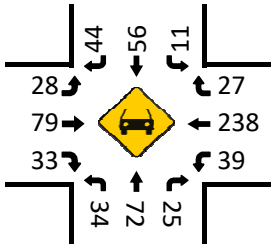
	PM	NOON	AM
1	9	0	27
1	116	0	238
1	8	0	39
0	0	0	2
	136	0	117

NORTHBOUND (Keegan St)

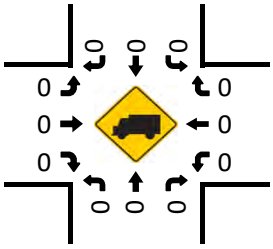
PM	49	0	15	27	11	PM
NOON	0	0	0	0	0	NOON
AM	128	0	34	72	25	AM
		0	1	1	0	

CONTROL			
Signalized			
TEV	688	0	406
	AM	NOON	PM
PHF	0.69		0.83

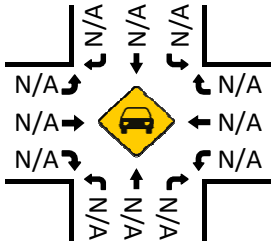
Cars (AM)



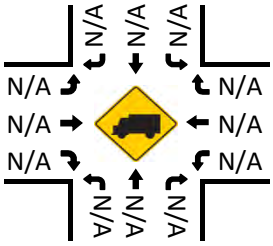
HT (AM)



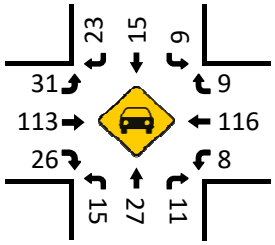
Cars (NOON)



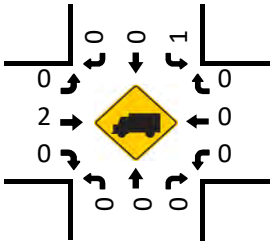
HT (NOON)



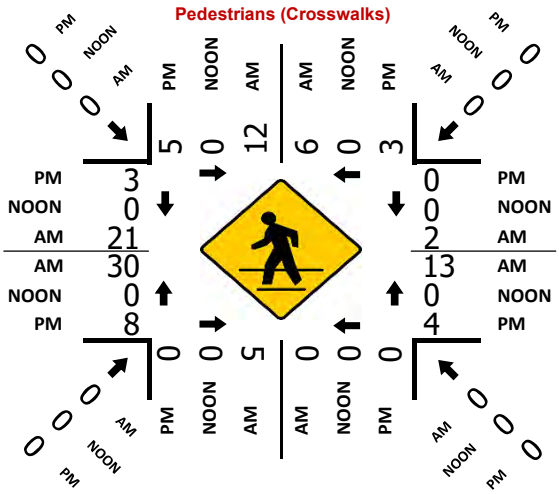
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)


PM 3
NOON 0
AM 21
AM 30
NOON 0
PM 8
5
0
12
6
0
3
0
0
2
13
0
4
0
0
5
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Tassajara Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-005
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	
	08:00 AM - 09:00 AM
	NONE
	04:00 PM - 05:00 PM

COUNT PERIODS	
	07:00 AM - 09:00 AM
	NONE
	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	160	1299	30	0	666	AM
NOON	0	0	0	0	0	NOON
PM	121	781	70	2	873	PM

Dublin Blvd — EASTBOUND

AM	NOON	PM	
811	0	677	
5	0	18	0
67	0	252	2
165	0	633	3
173	0	479	2
AM	NOON	PM	

Dublin Blvd — WESTBOUND

PM	NOON	AM	
	38	0	50	0
	255	0	421	2
	324	0	575	3
	0	0	0	0
	997	0	434	
PM	NOON	AM	

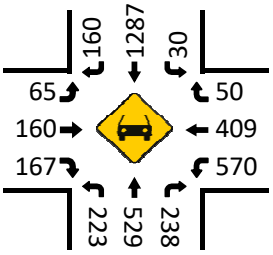
	2	4	2	0	
	0	3	2	1	

CONTROL			
Signalized			
TEV	3958	0	4131
	AM	NOON	PM
PHF	0.94		0.96

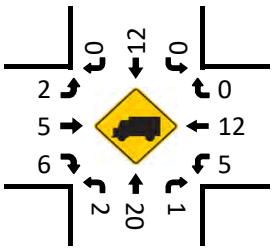
Tassajara Rd — NORTHBOUND

PM	1584	0	283	581	294	PM
NOON	0	0	0	0	0	NOON
AM	2047	0	225	549	239	AM

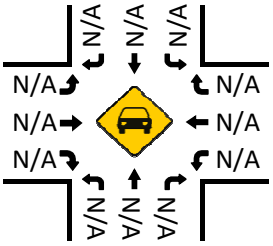
Cars (AM)



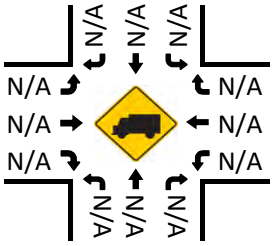
HT (AM)



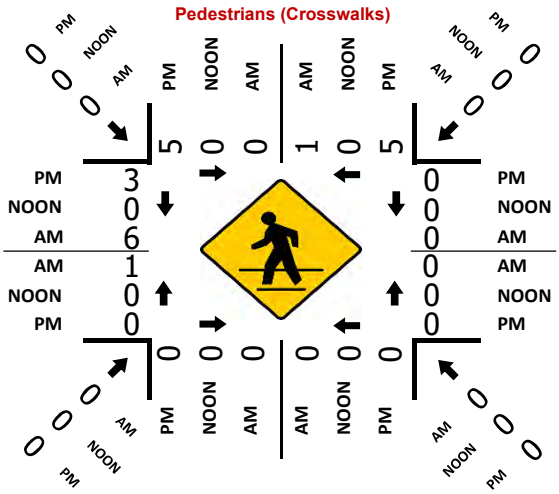
Cars (NOON)



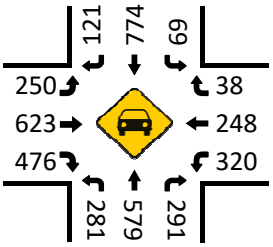
HT (NOON)



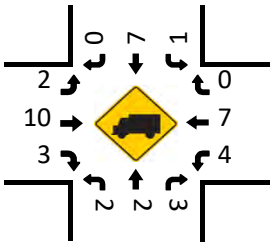
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Brannigan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-006
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	101	2	31	0	75	AM
NOON	0	0	0	0	0	NOON
PM	39	3	15	0	75	PM

Dublin Blvd — EASTBOUND

AM	NOON	PM	
1040	0	610	⇦
0	0	3	0
42	0	59	1
355	0	865	2
41	0	63	1

Dublin Blvd — WESTBOUND

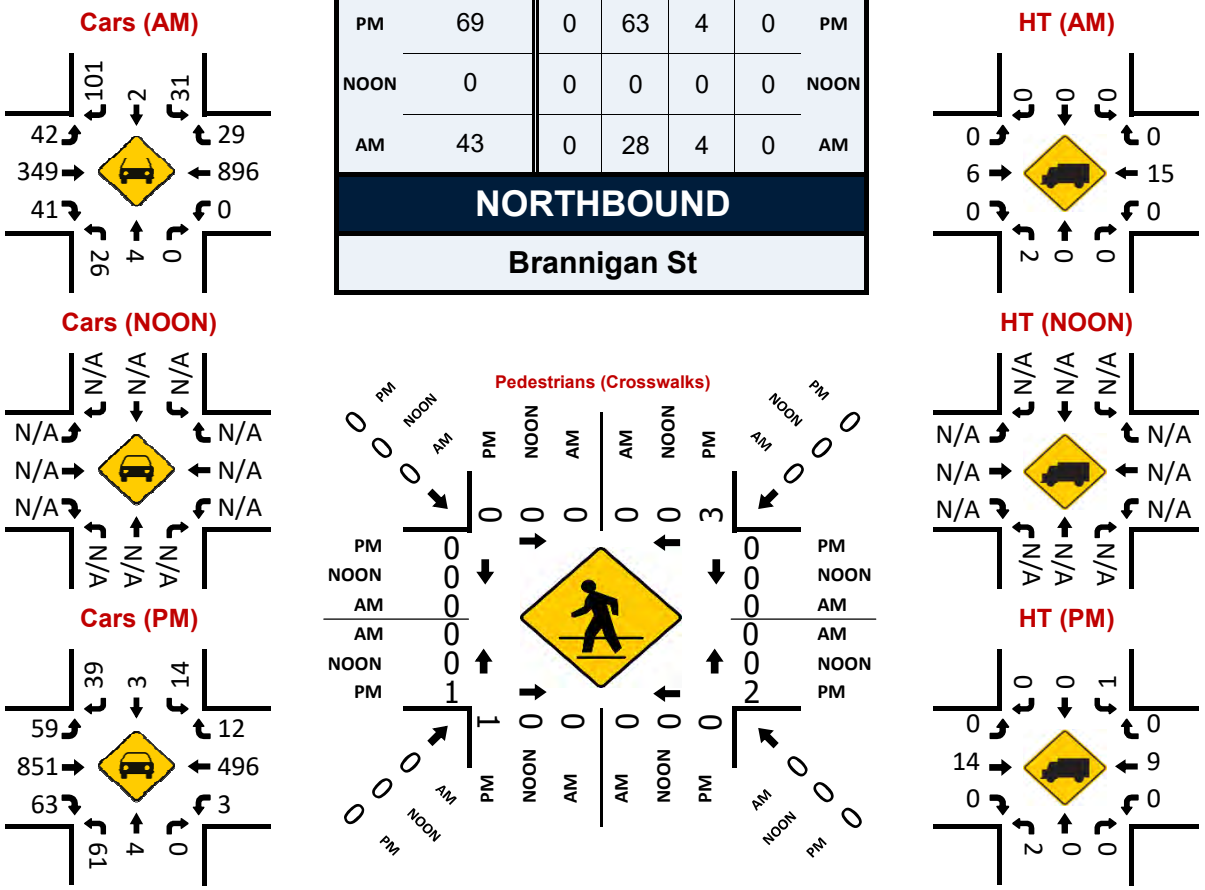
	PM	NOON	AM
1	12	0	29
2	505	0	911
1	3	0	0
0	7	0	9
⇨	887	0	395

Brannigan St — NORTHBOUND

PM	69	0	63	4	0	PM
NOON	0	0	0	0	0	NOON
AM	43	0	28	4	0	AM

Turning movements (AM / NOON / PM): 0.5 0.5 1 0 — 0 1 0.5 0.5

CONTROL			
Signalized			
TEV	1553 AM	0 NOON	1641 PM
PHF	0.84		0.96



Prepared by National Data & Surveying Services

Grafton St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-007
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Grafton St — SOUTHBOUND

AM	5	0	8	0	1	AM
NOON	0	0	0	0	0	NOON
PM	2	0	2	0	0	PM

Dublin Blvd — EASTBOUND

AM	NOON	PM		
899	0	483		
0	0	0	0	
1	0	0	1	
373	0	809	3	
10	0	52	1	
AM	NOON	PM		

Dublin Blvd — WESTBOUND

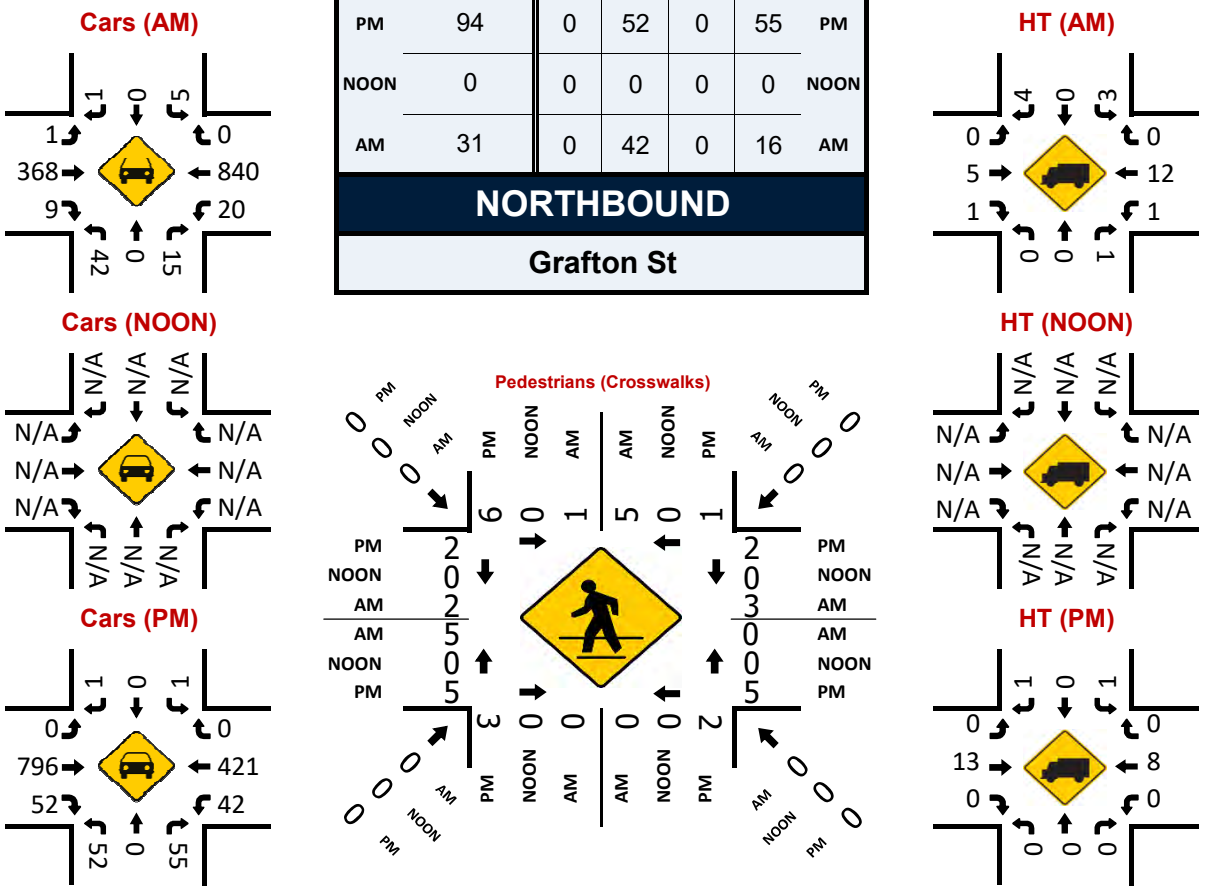
PM	NOON	AM		
0	0	0	1	
429	0	852	3	
42	0	21	1	
0	0	0	0	
866	0	397		
PM	NOON	AM		

Grafton St — NORTHBOUND

PM	94	0	52	0	55	PM
NOON	0	0	0	0	0	NOON
AM	31	0	42	0	16	AM

Turning movements (red): 0 1 0 0 | 0 2 1 1

CONTROL			
Signalized			
TEV	1328	0	1443
	AM	NOON	PM
PHF	0.87		0.93



Prepared by National Data & Surveying Services

Keegan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-008
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

Keegan St — SOUTHBOUND

AM	267	3	30	0	91	AM
NOON	0	0	0	0	0	NOON
PM	88	0	37	0	170	PM
	1	0	1	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM	
812	0	450	⇦
2	0	2	↶ 0
77	0	135	↱ 2
208	0	637	→ 2
111	0	58	↳ 1

Dublin Blvd — WESTBOUND

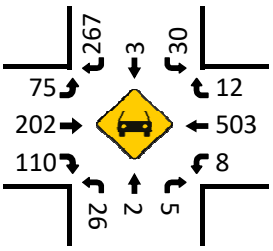
PM	NOON	AM	
35	0	12	↰ 1
275	0	516	← 3
2	0	8	↰ 1
0	0	0	↶ 0
680	0	243	⇨

Keegan St — NORTHBOUND

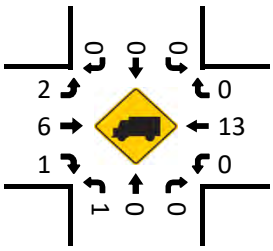
PM	60	0	85	0	6	PM
NOON	0	0	0	0	0	NOON
AM	122	0	27	2	5	AM
		0	2	1	1	

CONTROL			
Signalized			
TEV	1268 AM	0 NOON	1360 PM
PHF	0.85		0.89

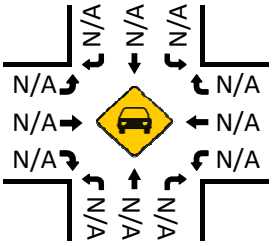
Cars (AM)



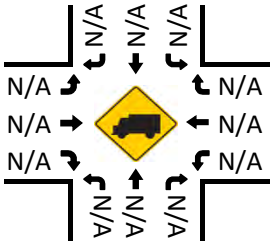
HT (AM)



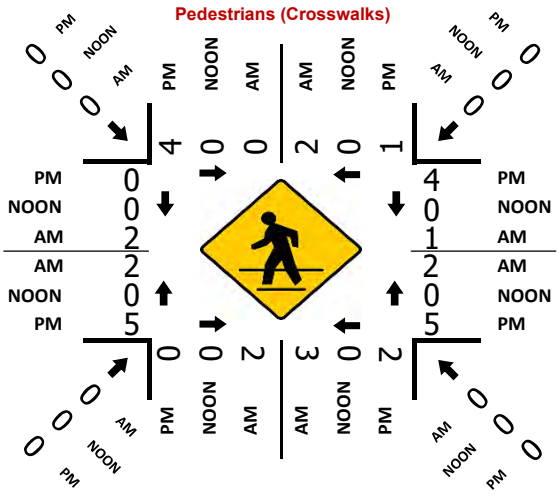
Cars (NOON)



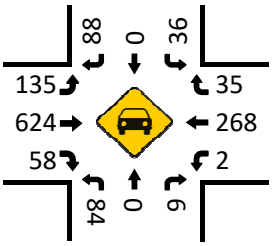
HT (NOON)



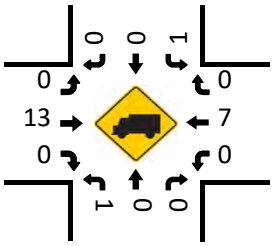
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-009
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Fallon Rd)

AM	207	1147	0	0	710	AM
NOON	0	0	0	0	0	NOON
PM	121	697	0	0	835	PM
	1	2	1	0		

EASTBOUND (Dublin Blvd)

AM	NOON	PM	
506	0	270	
0	0	1	0
113	0	224	1.5
0	0	0	0.5
174	0	475	2

WESTBOUND (Dublin Blvd)

	PM	NOON	AM
0.5	0	0	1
0.5	0	0	0
1	0	0	0
0	0	0	0
	0	0	1

NORTHBOUND (Fallon Rd)

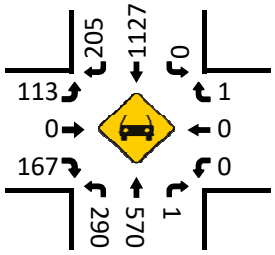
PM	1172	0	148	611	0
NOON	0	0	0	0	0
AM	1321	0	299	596	1
		0	2	2	0

CONTROL

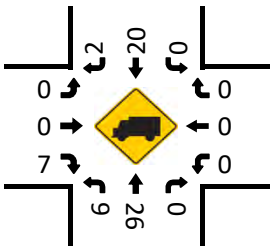
Signalized

TEV	2538	0	2277
	AM	NOON	PM
PHF	0.96		0.90

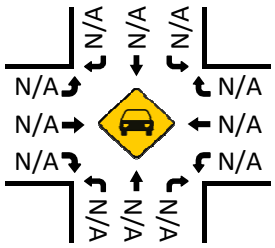
Cars (AM)



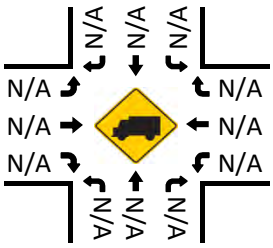
HT (AM)



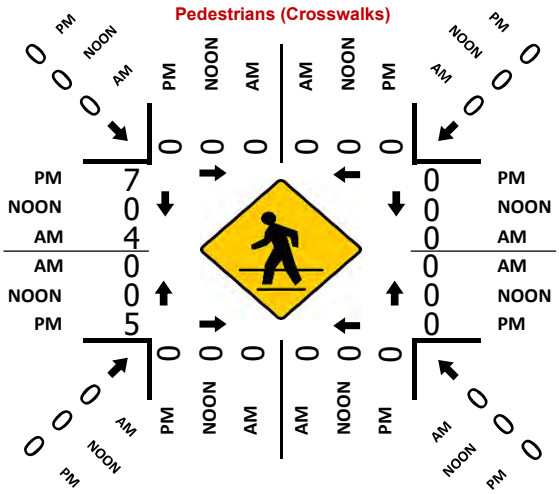
Cars (NOON)



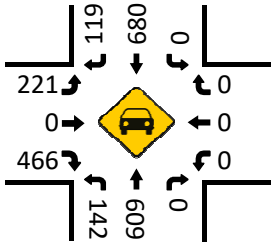
HT (NOON)



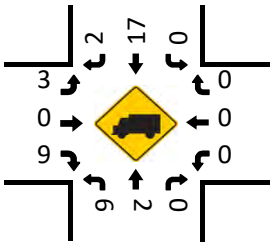
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-010
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Fallon Rd — SOUTHBOUND

AM	104	699	0	0	574	AM
NOON	0	0	0	0	0	NOON
PM	39	365	0	0	339	PM

Gleason Dr — EASTBOUND

AM	NOON	PM	
412	0	199	⇦
0	0	0	↶ 0
60	0	51	↱ 2
0	0	0	→ 0
187	0	240	↴ 2

Gleason Dr — WESTBOUND

PM	NOON	AM	
0	0	0	0 ↰
0	0	0	0 ←
0	0	0	0 ↶
0	0	0	0 ↷
0	0	0	⇨

1	2	0	0

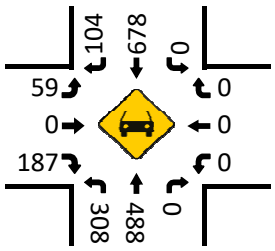
0	1	3	0

Fallon Rd — NORTHBOUND

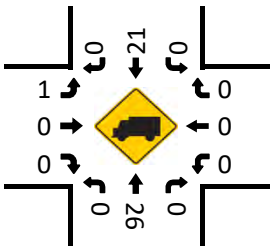
PM	607	2	160	288	0	PM
NOON	0	0	0	0	0	NOON
AM	887	1	308	514	0	AM

CONTROL			
Signalized			
TEV	1873	0	1145
	AM	NOON	PM
PHF	0.76		0.75

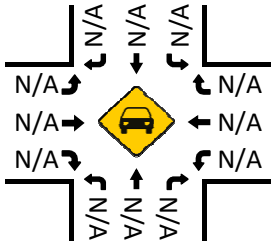
Cars (AM)



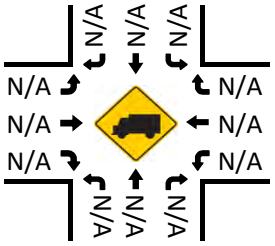
HT (AM)



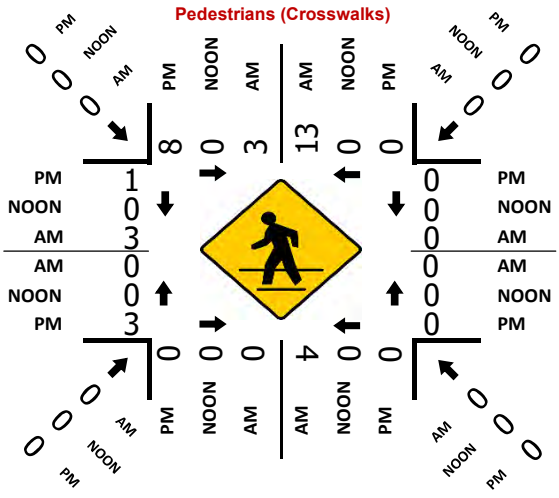
Cars (NOON)



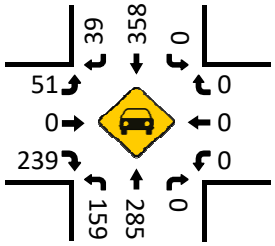
HT (NOON)



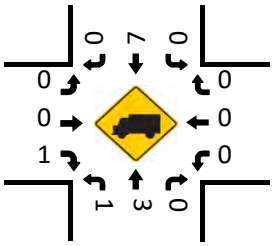
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Tassajara Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-011
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:04 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	307	1036	73	2	580	AM
NOON	0	0	0	0	0	NOON
PM	94	604	28	1	909	PM

Gleason Dr — EASTBOUND

AM	NOON	PM	
673	0	224	
0	0	1	0
101	0	242	2
134	0	159	1
44	0	131	1

Gleason Dr — WESTBOUND

PM	NOON	AM	
35	0	58	0.5
76	0	246	0.5
108	0	216	2
0	0	0	0
306	0	338	

Tassajara Rd — NORTHBOUND

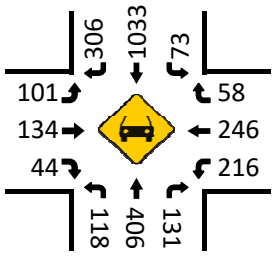
PM	846	3	53	631	119	PM
NOON	0	0	0	0	0	NOON
AM	1297	1	120	419	131	AM

Turning movements (red): 1 2 1 0 — 0 2 2 1

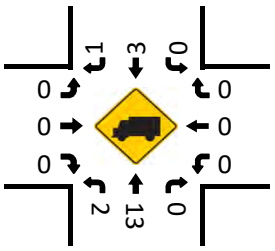
CONTROL: Signalized

	AM	NOON	PM
TEV	2888	0	2285
PHF	0.85		0.99

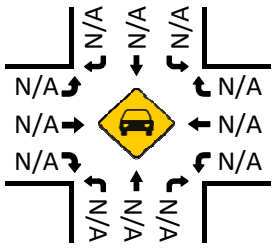
Cars (AM)



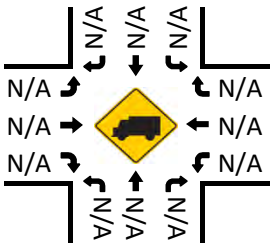
HT (AM)



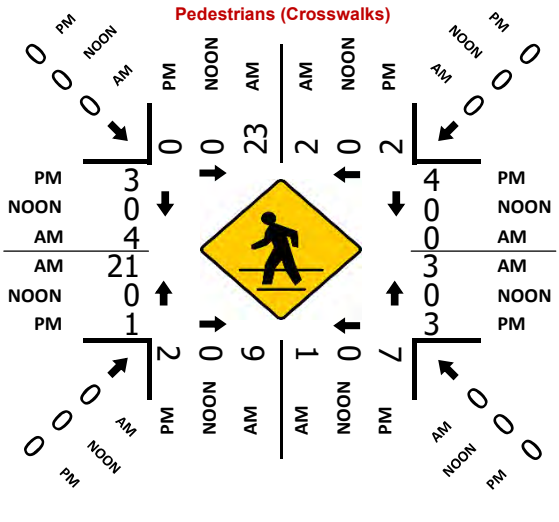
Cars (NOON)



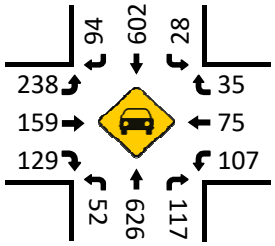
HT (NOON)



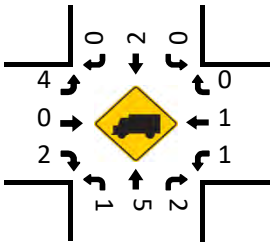
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Brannigan St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-012
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	239	129	53	0	409	AM
NOON	0	0	0	0	0	NOON
PM	93	23	14	0	91	PM
	1	1	1	0		

Gleason Dr — EASTBOUND

AM	NOON	PM	
522	0	258	
0	0	0	0
203	0	61	1
114	0	224	1
4	0	6	0
AM	NOON	PM	

Gleason Dr — WESTBOUND

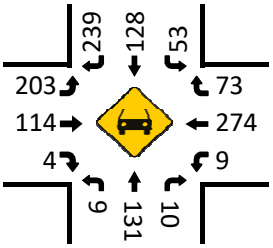
	PM	NOON	AM
1	6	0	73
1	162	0	274
1	1	0	9
0	0	0	3
	240	0	180
	PM	NOON	AM

CONTROL			
Signalized			
TEV	1253	0	619
	AM	NOON	PM
PHF	0.59		0.81

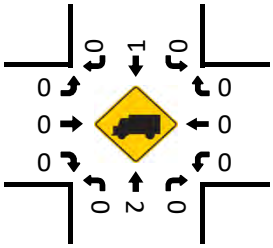
Brannigan St — NORTHBOUND

	0	1	0.5	0.5		
PM	30	0	3	24	2	PM
NOON	0	0	0	0	0	NOON
AM	142	0	9	133	10	AM

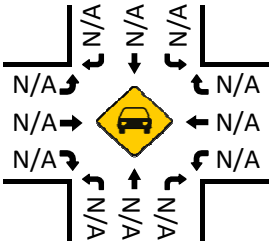
Cars (AM)



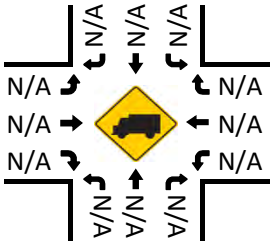
HT (AM)



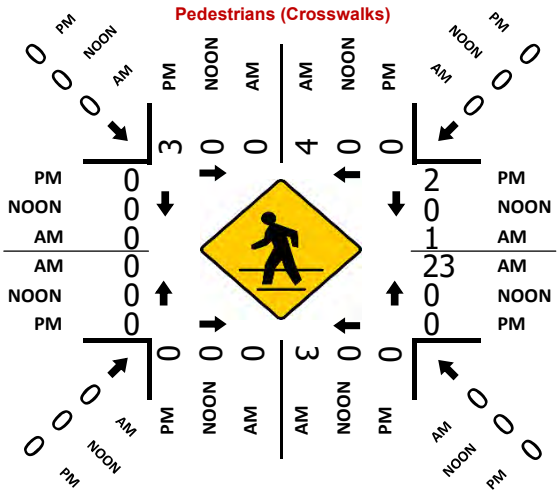
Cars (NOON)



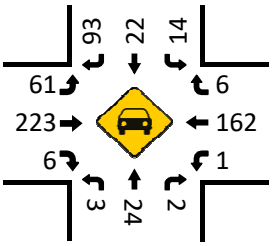
HT (NOON)



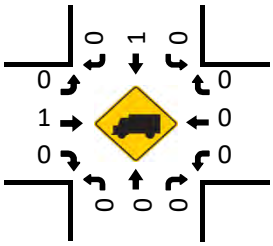
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Grafton St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-013
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Grafton St — SOUTHBOUND

AM	113	41	86	0	191	AM
NOON	0	0	0	0	0	NOON
PM	55	19	75	0	124	PM
	0.5	0.5	1	0		

Gleason Dr — EASTBOUND

AM	NOON	PM		
358	0	167		
0	0	0	0	
30	0	46	1	
112	0	166	3	
36	0	30	0	
AM	NOON	PM		

CONTROL

Signalized

TEV	850	0	589
	AM	NOON	PM
PHF	0.67		0.66

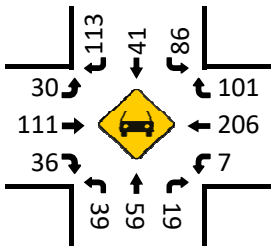
Gleason Dr — WESTBOUND

	PM	NOON	AM
1	60	0	102
2	90	0	206
1	5	0	7
0	0	0	0
	244	0	217
	PM	NOON	AM

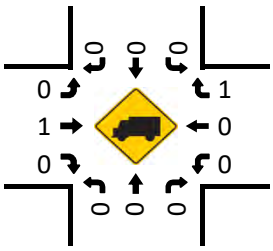
Grafton St — NORTHBOUND

	0	1	0.5	0.5		
PM	54	0	22	18	3	PM
NOON	0	0	0	0	0	NOON
AM	84	0	39	59	19	AM

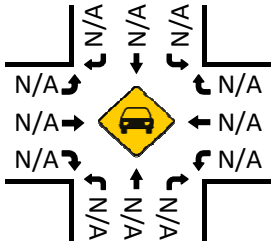
Cars (AM)



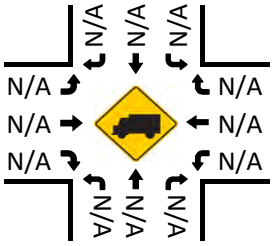
HT (AM)



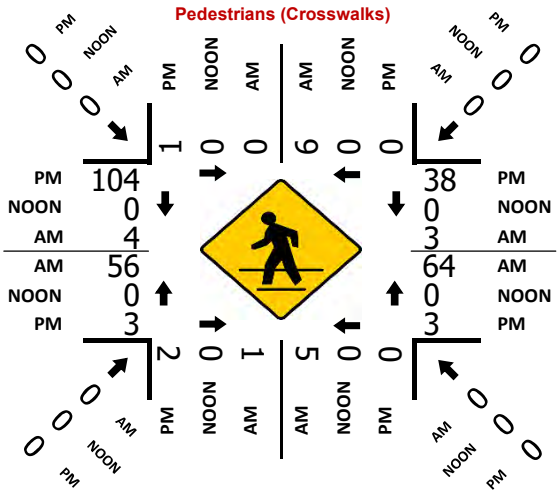
Cars (NOON)



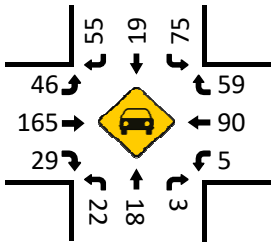
HT (NOON)



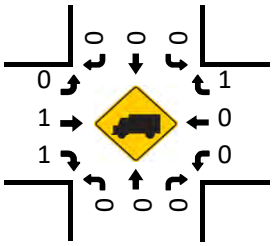
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-014
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

SOUTHBOUND (Fallon Rd)

AM	84	1009	103	2	670	AM
NOON	0	0	0	0	0	NOON
PM	59	636	22	2	726	PM

EASTBOUND (Central Pkwy)

AM	NOON	PM		
332	0	155		
3	0	1	0	
35	0	49	2	
192	0	33	1	
72	0	56	2	
AM	NOON	PM		

WESTBOUND (Central Pkwy)

PM	NOON	AM	
19	0	99	1
43	0	192	1
123	0	278	2
0	0	0	0
176	0	406	
PM	NOON	AM	

NORTHBOUND (Fallon Rd)

PM	818	3	52	656	121	PM
NOON	0	0	0	0	0	NOON
AM	1365	6	53	534	111	AM

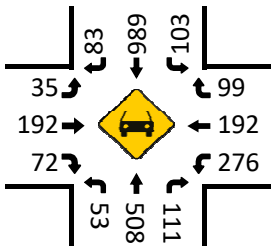
Turning movements (1 3 1 0): 0 2 3 1

CONTROL

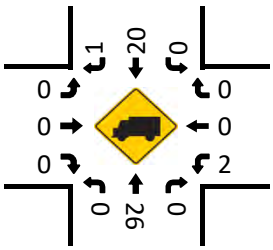
Signalized

TEV	2773	0	1875
	AM	NOON	PM
PHF	0.81		0.88

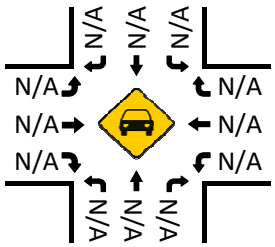
Cars (AM)



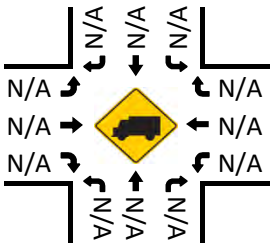
HT (AM)



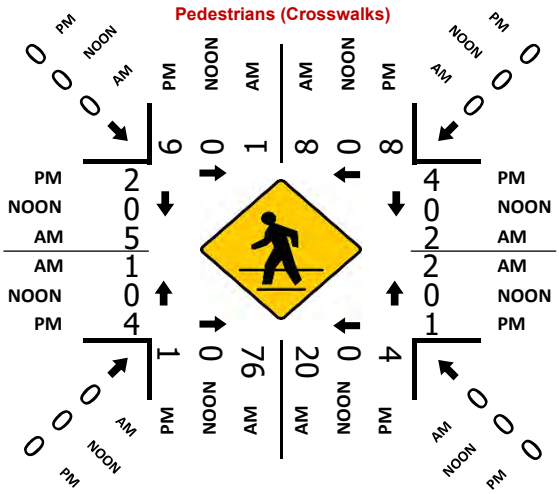
Cars (NOON)



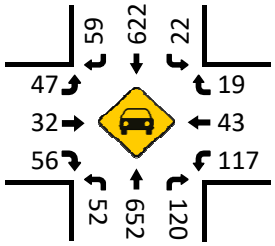
HT (NOON)



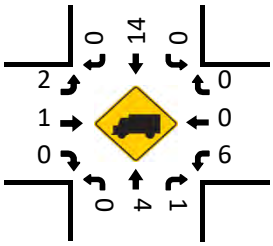
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Chancery Ln & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-015
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Chancery Ln)

AM	53	3	8	0	29	AM
NOON	0	0	0	0	0	NOON
PM	26	0	1	0	46	PM
	0.5	0.5	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
414	0	201	
0	0	3	0
17	0	32	1
101	0	204	1
7	0	9	1

WESTBOUND (Central Pkwy)

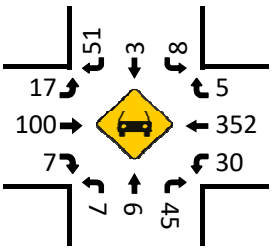
	PM	NOON	AM
1	11	0	6
1	167	0	354
1	6	0	30
0	0	0	0
	211	0	154

NORTHBOUND (Chancery Ln)

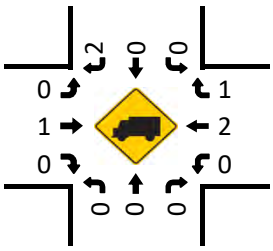
PM	15	0	5	3	6	PM
NOON	0	0	0	0	0	NOON
AM	40	0	7	6	45	AM
		0	1	0.5	0.5	

CONTROL			
Signalized			
TEV	637	0	473
	AM	NOON	PM
PHF	0.78		0.84

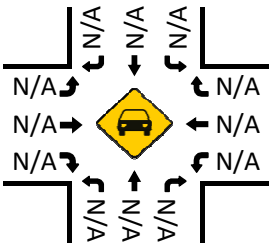
Cars (AM)



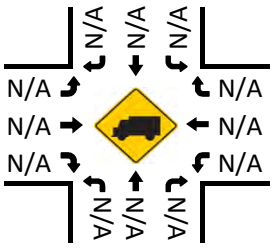
HT (AM)



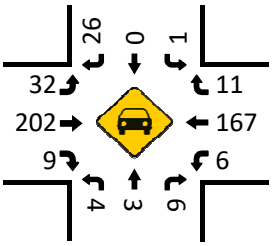
Cars (NOON)



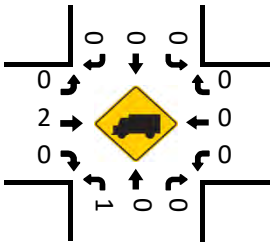
HT (NOON)



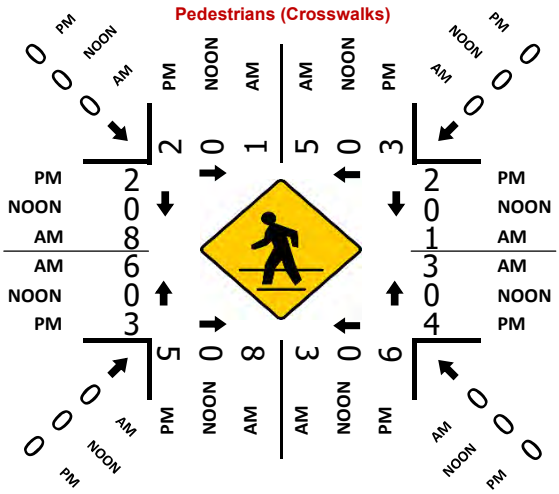
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Brannigan St & Finnian Way

Peak Hour Turning Movement Count

ID: 19-08581-016
City: Dublin

Day: Tuesday
Date: 11/12/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	0	126	8	0	73	AM
NOON	0	0	0	0	0	NOON
PM	0	54	9	0	60	PM

Finnian Way — EASTBOUND

AM	NOON	PM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

AM NOON PM

Finnian Way — WESTBOUND

PM	NOON	AM
4	0	12
0	0	0
26	0	30
0	0	0
40	0	24

PM NOON AM

Brannigan St — NORTHBOUND

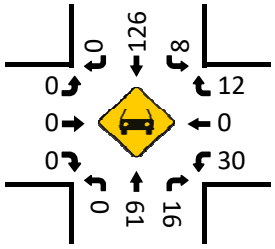
PM	81	1	0	56	31	PM
NOON	0	0	0	0	0	NOON
AM	156	0	0	61	16	AM

CONTROL

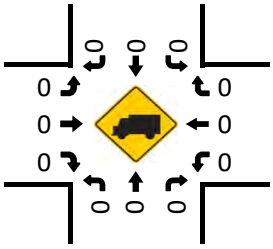
3-Way Stop (NB/SB/WB)

TEV	253	0	181
	AM	NOON	PM
PHF	0.74		0.87

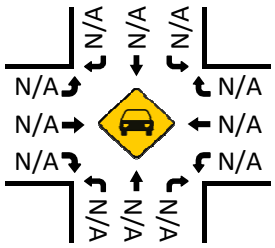
Cars (AM)



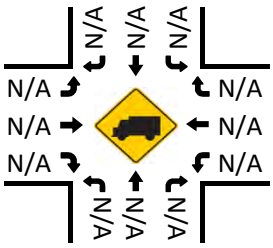
HT (AM)



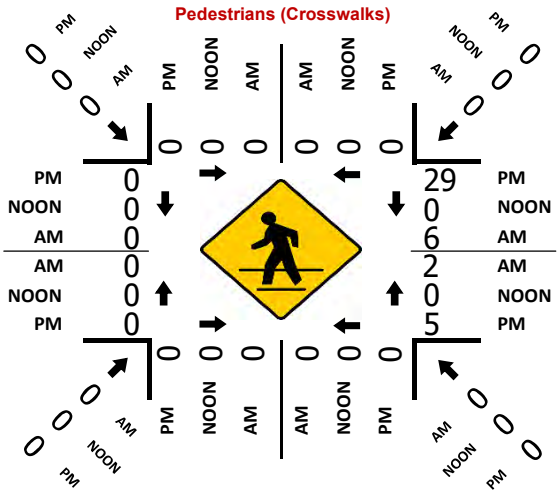
Cars (NOON)



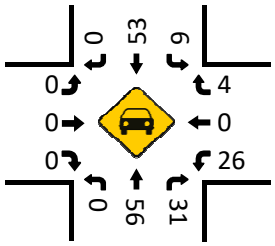
HT (NOON)



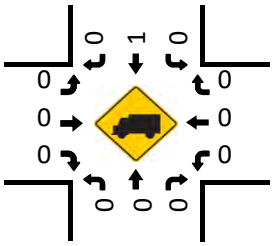
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Tassajara Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-001
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	151	1229	9	0	604	AM
NOON	0	0	0	0	0	NOON
PM	29	839	16	0	808	PM
	1	2	1	0		

Central Pkwy — EASTBOUND

AM	NOON	PM		
422	0	135	⇦	
20	0	1	↶	0
82	0	46	↱	1
105	0	108	→	1
64	0	94	↳	1
AM	NOON	PM		

Central Pkwy — WESTBOUND

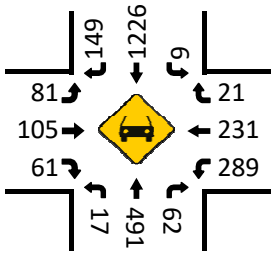
PM	NOON	AM		
17	0	21	↰	0.5
73	0	232	←	0.5
110	0	289	↰	2
0	0	0	↰	0
267	0	178	⇨	
PM	NOON	AM		

Tassajara Rd — NORTHBOUND

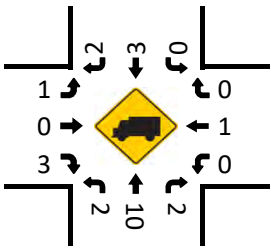
PM	1063	20	32	745	143	PM
NOON	0	0	0	0	0	NOON
AM	1592	10	19	501	64	AM
		0	1	1	1	

CONTROL			
Signalized			
TEV	2796	0	2273
	AM	NOON	PM
PHF	0.88		0.98

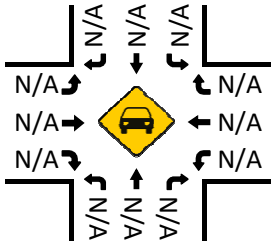
Cars (AM)



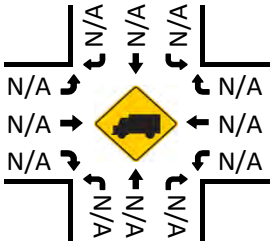
HT (AM)



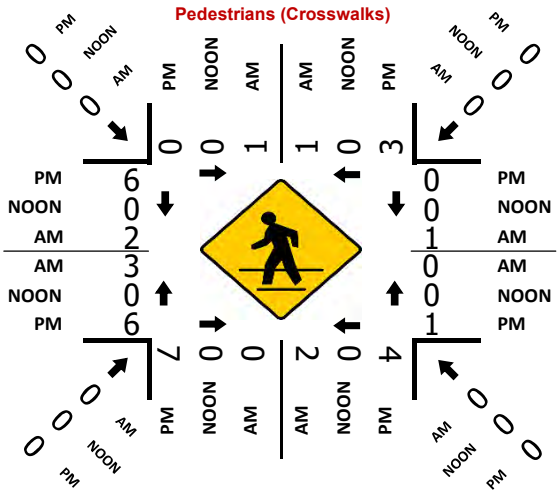
Cars (NOON)



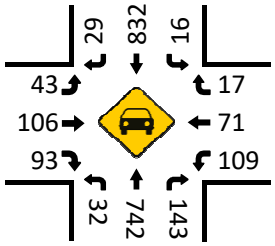
HT (NOON)



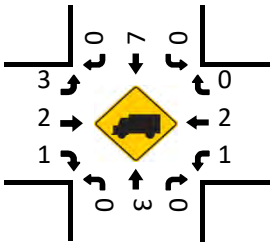
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Brannigan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-002
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
03:45 PM - 04:45 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	105	107	16	0	150	AM
NOON	0	0	0	0	0	NOON
PM	28	28	2	0	63	PM
	0.5	0.5	1	0		

Central Pkwy — EASTBOUND

AM	NOON	PM	
540	0	195	
0	0	0	0
78	0	35	1
100	0	226	1
1	0	13	0
AM	NOON	PM	

CONTROL

Signalized

TEV	944	0	545
	AM	NOON	PM
PHF	0.74		0.93

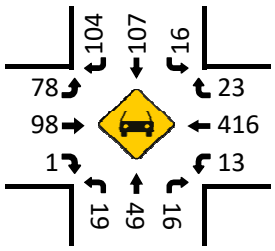
Central Pkwy — WESTBOUND

	PM	NOON	AM
1	5	0	23
1	155	0	416
1	5	0	13
0	0	0	1
	241	0	133
	PM	NOON	AM

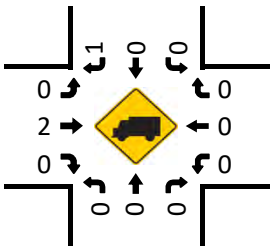
Brannigan St — NORTHBOUND

PM	46	0	12	23	13	PM
NOON	0	0	0	0	0	NOON
AM	121	0	19	49	16	AM
		0	1	0.5	0.5	

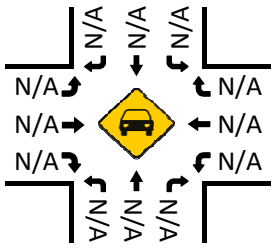
Cars (AM)



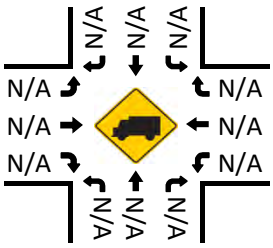
HT (AM)



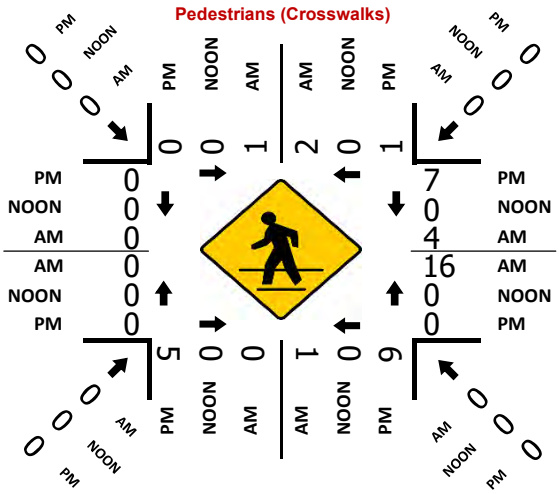
Cars (NOON)



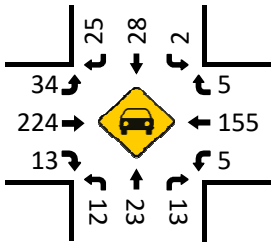
HT (NOON)



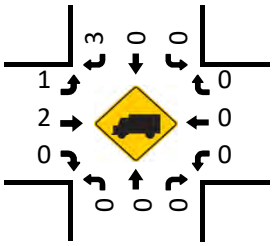
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Grafton St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-003
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
03:45 PM - 04:45 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Grafton St)

AM	110	0	30	0	73	AM
NOON	0	0	0	0	0	NOON
PM	39	0	20	0	62	PM
	1	0	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
440	0	156	
3	0	0	0
53	0	51	1
117	0	169	1
0	0	0	1

WESTBOUND (Central Pkwy)

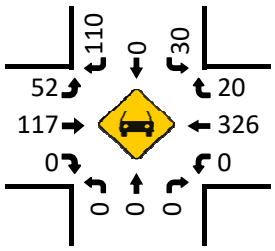
	PM	NOON	AM
1	11	0	20
1	117	0	327
1	0	0	0
0	2	0	6
	191	0	153

NORTHBOUND (Grafton St)

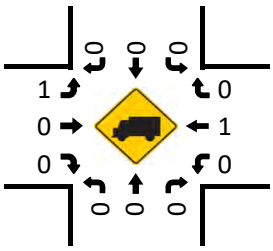
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
	0	0	0	0		

CONTROL			
Signalized			
TEV	666	0	409
	AM	NOON	PM
PHF	0.75		0.88

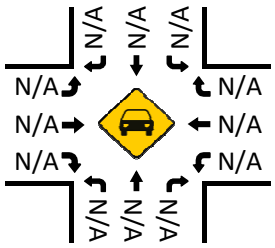
Cars (AM)



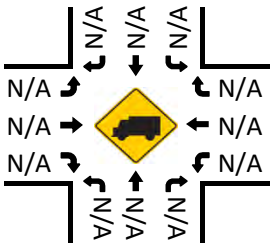
HT (AM)



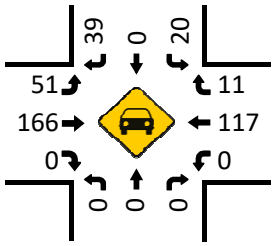
Cars (NOON)



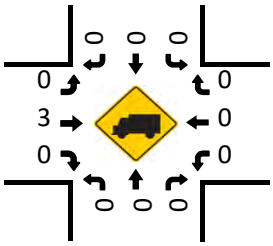
HT (NOON)



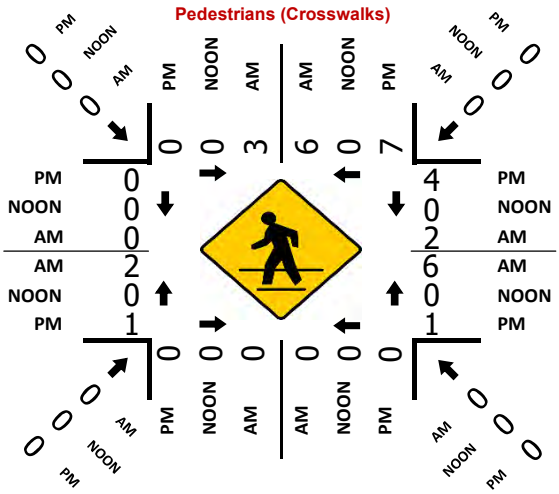
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Keegan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-004
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Keegan St)

AM	51	63	14	0	127	AM
NOON	0	0	0	0	0	NOON
PM	22	26	16	0	76	PM
	0.5	0.5	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
353	0	137	
1	0	1	0
37	0	28	1
77	0	126	1
39	0	29	1

WESTBOUND (Central Pkwy)

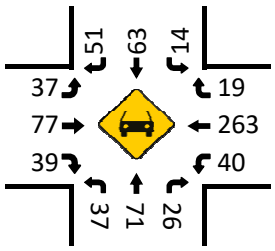
	PM	NOON	AM
1	19	0	19
1	96	0	264
1	8	0	40
0	0	0	0
	150	0	117

NORTHBOUND (Keegan St)

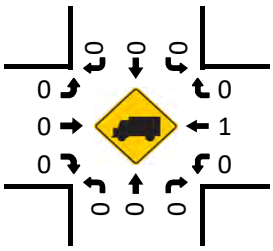
PM	63	0	18	29	8	PM
NOON	0	0	0	0	0	NOON
AM	143	1	37	71	26	AM
		0	1	1	0	

CONTROL			
Signalized			
TEV	740 AM	0 NOON	426 PM
PHF	0.68		0.89

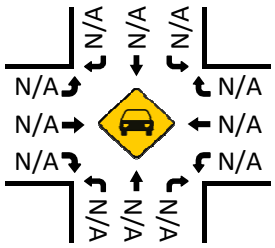
Cars (AM)



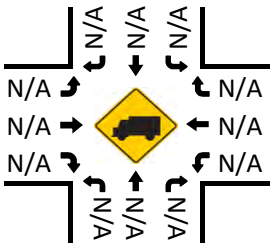
HT (AM)



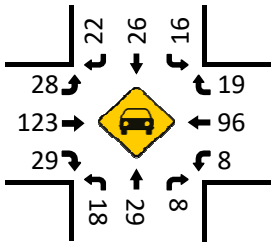
Cars (NOON)



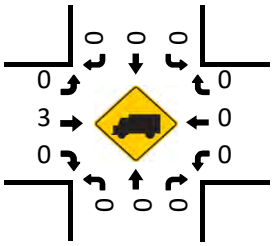
HT (NOON)



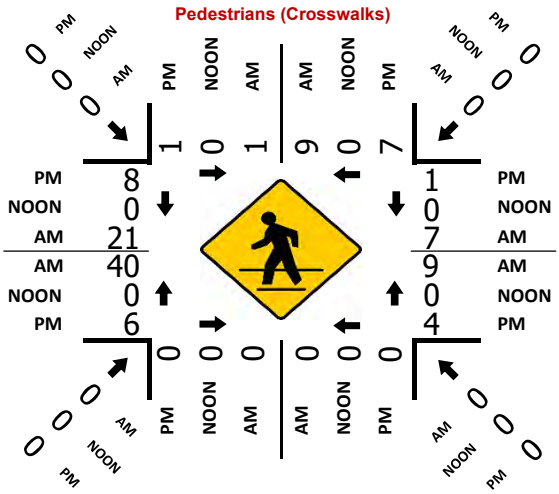
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Tassajara Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-005
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	182	1363	28	2	590	AM
NOON	0	0	0	0	0	NOON
PM	149	859	76	1	900	PM

Dublin Blvd — EASTBOUND

AM	NOON	PM	
848	0	693	
3	0	10	0
67	0	249	2
148	0	663	3
149	0	466	2

Dublin Blvd — WESTBOUND

	PM	NOON	AM
0	44	0	47
2	258	0	432
3	330	0	596
0	0	0	0
	1073	0	444

Tassajara Rd — NORTHBOUND

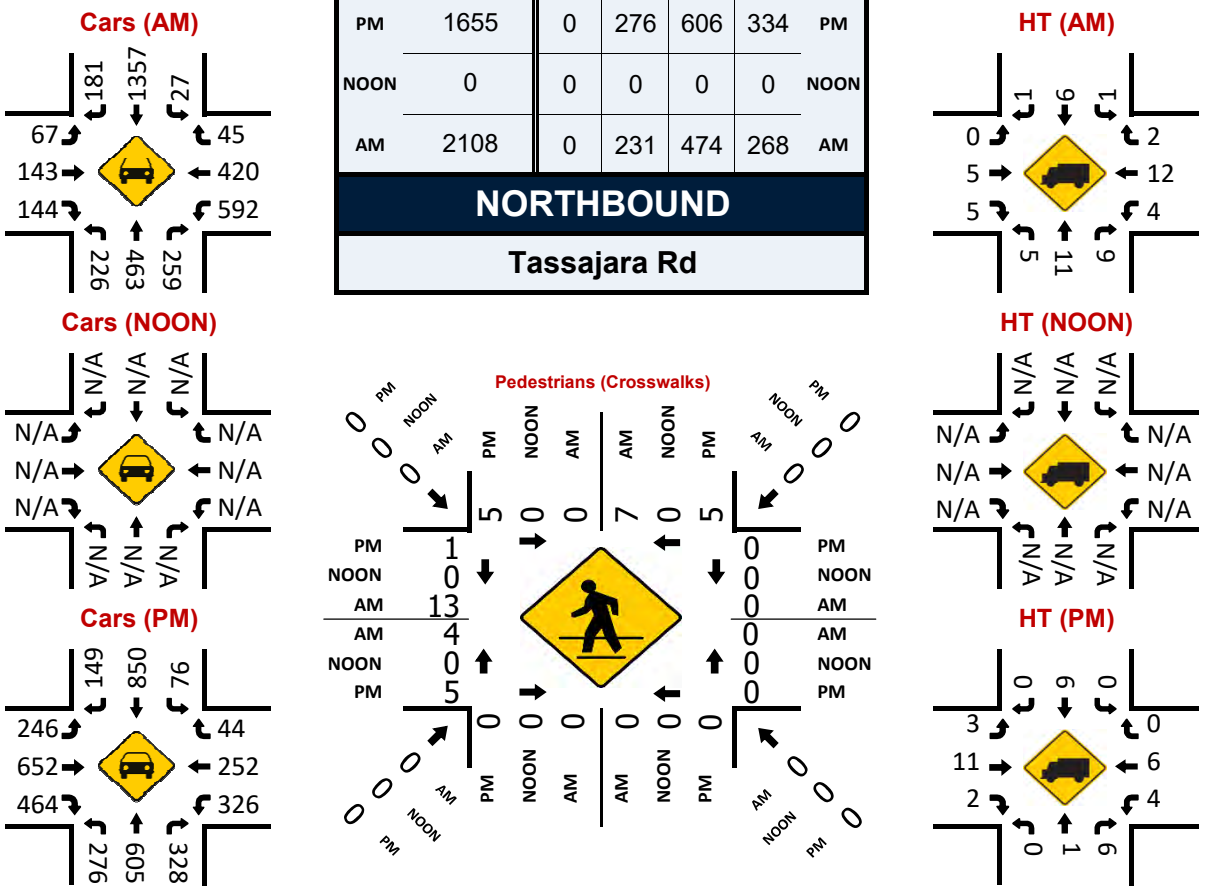
PM	1655	0	276	606	334	PM
NOON	0	0	0	0	0	NOON
AM	2108	0	231	474	268	AM

Turning movements (AM): 2 4 2 0 — 0 3 2 1

CONTROL

Signalized

	AM	NOON	PM
TEV	3990	0	4321
PHF	0.93		0.96



Prepared by National Data & Surveying Services

Brannigan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-006
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
03:45 PM - 04:45 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	150	1	21	0	62	AM
NOON	0	0	0	0	0	NOON
PM	35	8	17	0	115	PM
	0.5	0.5	1	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM		
1082	0	620		
0	0	3	0	
37	0	81	1	
366	0	938	2	
40	0	54	1	
AM	NOON	PM		

CONTROL

Signalized

TEV	1585	0	1769
	AM	NOON	PM
PHF	0.84		0.92

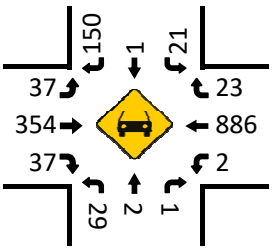
Dublin Blvd — WESTBOUND

PM	NOON	AM	
21	0	23	1
500	0	899	2
6	0	3	1
7	0	7	0
966	0	397	
PM	NOON	AM	

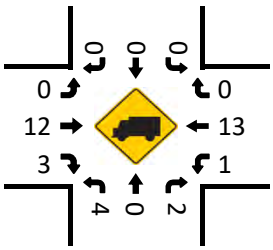
Brannigan St — NORTHBOUND

PM	68	0	82	13	4	PM
NOON	0	0	0	0	0	NOON
AM	44	0	33	2	3	AM
		0	1	0.5	0.5	

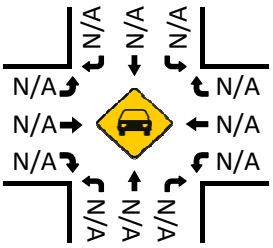
Cars (AM)



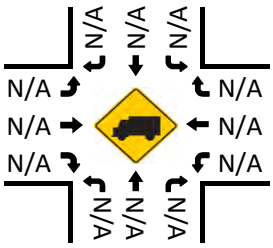
HT (AM)



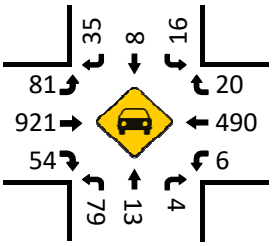
Cars (NOON)



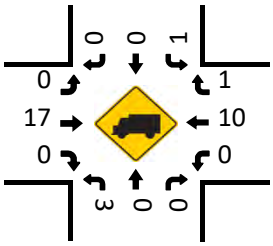
HT (NOON)



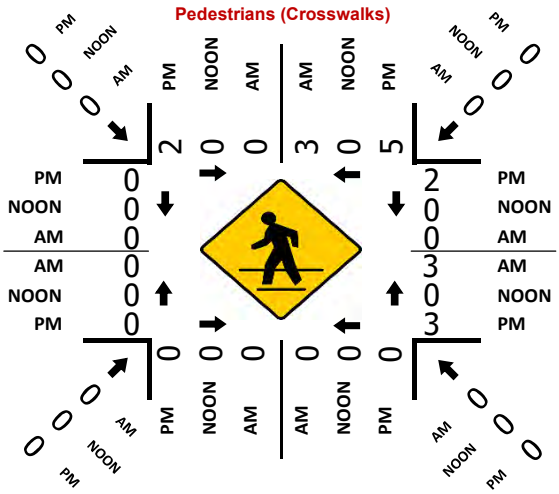
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Grafton St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-007
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

Grafton St — SOUTHBOUND

AM	6	0	6	0	4	AM
NOON	0	0	0	0	0	NOON
PM	4	0	2	0	1	PM
	0	1	0	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM	
908	0	549	⇦
10	0	28	↰ 0
4	0	1	↱ 1
358	0	856	→ 3
20	0	48	↳ 1

Dublin Blvd — WESTBOUND

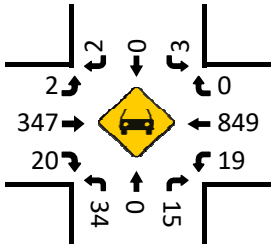
	PM	NOON	AM
1 ↰	0	0	0
3 ←	454	0	858
1 ↱	29	0	19
0 ↳	7	0	21
⇨	929	0	401

Grafton St — NORTHBOUND

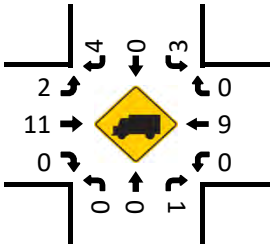
PM	77	0	63	0	64	PM
NOON	0	0	0	0	0	NOON
AM	39	0	34	0	16	AM
		0	2	1	1	

CONTROL			
Signalized			
TEV	1352	0	1556
	AM	NOON	PM
PHF	0.87		0.92

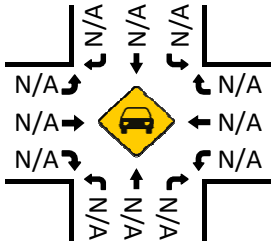
Cars (AM)



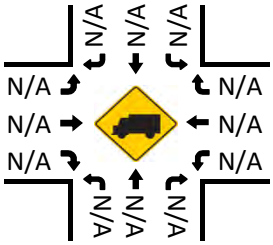
HT (AM)



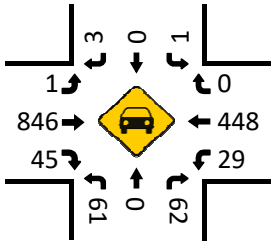
Cars (NOON)



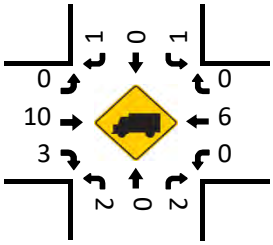
HT (NOON)



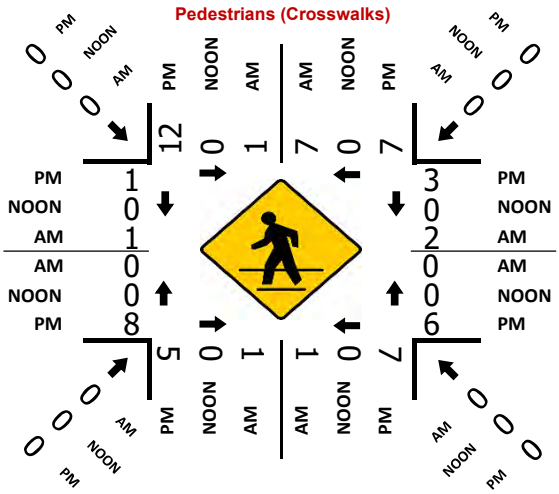
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Grafton St

NORTHBOUND

Prepared by National Data & Surveying Services

Keegan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-008
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	03:45 PM - 04:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

Keegan St — SOUTHBOUND

AM	275	1	50	0	94	AM
NOON	0	0	0	0	0	NOON
PM	96	2	41	0	172	PM
	1	0	1	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM		
750	0	455		
0	0	1	0	
72	0	150	2	
166	0	668	2	
122	0	53	1	
AM	NOON	PM		

Dublin Blvd — WESTBOUND

PM	NOON	AM		
21	0	22	1	
260	0	450	3	
3	0	2	1	
0	0	0	0	
724	0	222		
PM	NOON	AM		

Keegan St — NORTHBOUND

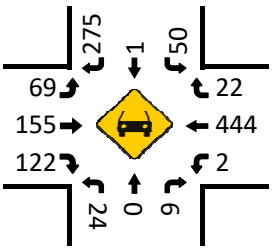
PM	58	0	98	1	15	PM
NOON	0	0	0	0	0	NOON
AM	125	0	25	0	6	AM
	0	2	1	1		

CONTROL

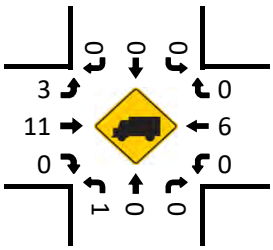
Signalized

	AM	NOON	PM
TEV	1191	0	1409
PHF	0.83		0.90

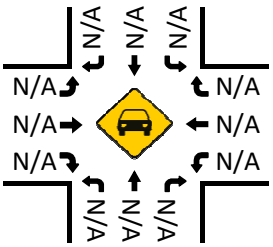
Cars (AM)



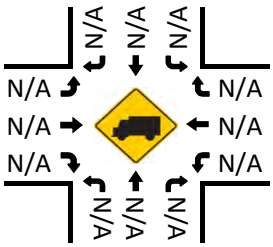
HT (AM)



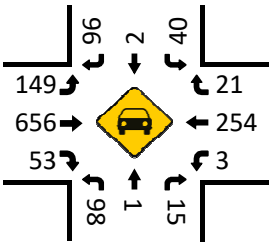
Cars (NOON)



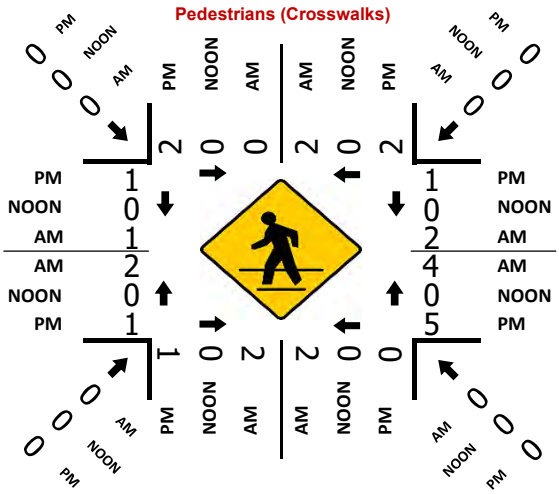
HT (NOON)



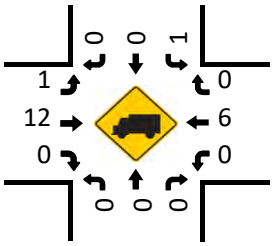
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-009
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Fallon Rd — SOUTHBOUND

AM	222	1297	0	0	548	AM
NOON	0	0	0	0	0	NOON
PM	113	763	0	0	912	PM
	1	2	1	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM	
434	0	256	
3	0	4	0
97	0	233	1.5
1	0	0	0.5
191	0	494	2

Dublin Blvd — WESTBOUND

	PM	NOON	AM
0.5	1	0	0
0.5	0	0	1
1	0	0	0
0	0	0	0
	0	0	1

CONTROL

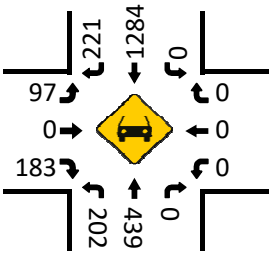
Signalized

TEV	2471	0	2425
	AM	NOON	PM
PHF	0.91		0.93

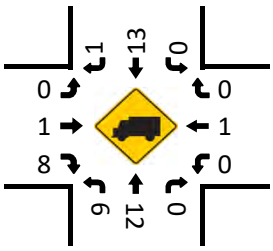
Fallon Rd — NORTHBOUND

	0	2	2	0		
PM	1257	0	139	678	0	PM
NOON	0	0	0	0	0	NOON
AM	1488	0	208	451	0	AM

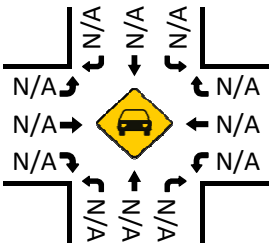
Cars (AM)



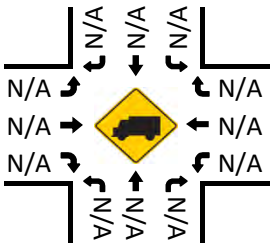
HT (AM)



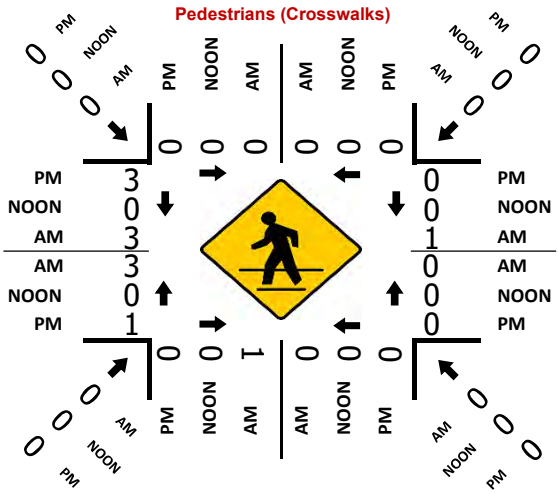
Cars (NOON)



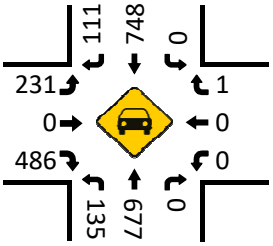
HT (NOON)



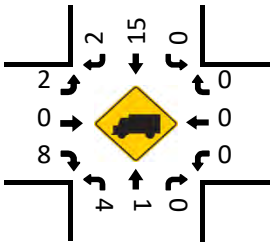
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-010
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Fallon Rd — SOUTHBOUND

AM	117	885	0	0	496	AM
NOON	0	0	0	0	0	NOON
PM	37	377	0	0	401	PM
	1	2	0	0		

Gleason Dr — EASTBOUND

AM	NOON	PM	
443	0	110	
0	0	0	0
47	0	48	2
0	0	0	0
174	0	145	2
AM	NOON	PM	

Gleason Dr — WESTBOUND

	PM	NOON	AM
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
	0	0	0
	PM	NOON	AM

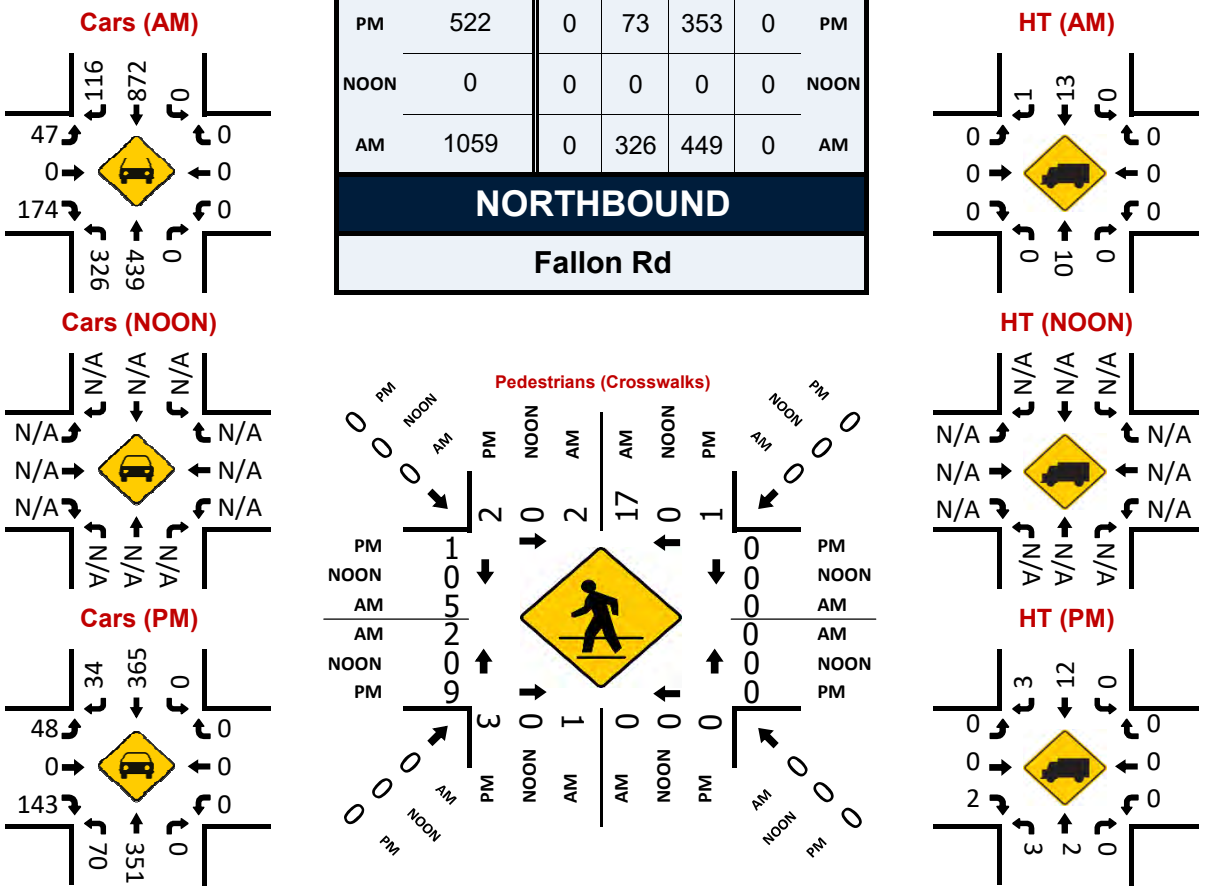
CONTROL

Signalized

TEV	1998	0	1033
	AM	NOON	PM
PHF	0.80		0.91

Fallon Rd — NORTHBOUND

PM	522	0	73	353	0	PM
NOON	0	0	0	0	0	NOON
AM	1059	0	326	449	0	AM
		0	1	3	0	



Prepared by National Data & Surveying Services

Tassajara Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-011
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	253	1257	16	1	608	AM
NOON	0	0	0	0	0	NOON
PM	124	659	34	0	932	PM

Gleason Dr — EASTBOUND

AM	NOON	PM	
829	0	231	
0	0	1	0
104	0	253	2
206	0	195	1
30	0	119	1

WESTBOUND — Gleason Dr

	PM	NOON	AM
0.5	36	0	22
0.5	48	0	473
2	100	0	83
0	0	0	0
	326	0	269

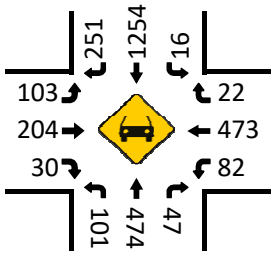
NORTHBOUND — Tassajara Rd

PM	879	1	58	643	97	PM
NOON	0	0	0	0	0	NOON
AM	1371	1	103	481	47	AM

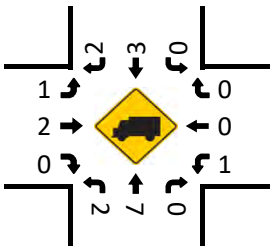
	1	2	1	0
	0	2	2	1

CONTROL			
Signalized			
TEV	3077	0	2368
	AM	NOON	PM
PHF	0.84		0.91

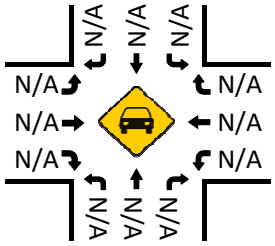
Cars (AM)



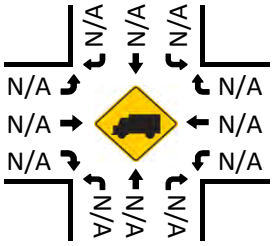
HT (AM)



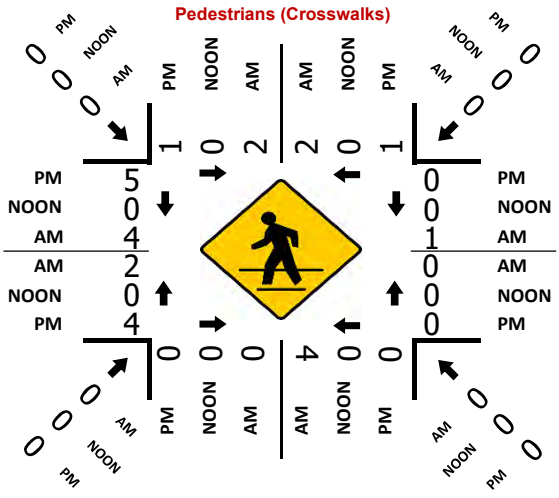
Cars (NOON)



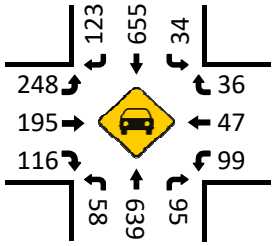
HT (NOON)



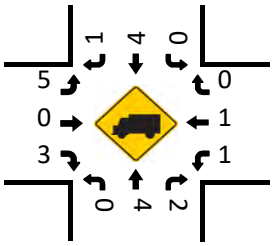
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Brannigan St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-012
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	243	140	56	0	396	AM
NOON	0	0	0	0	0	NOON
PM	61	17	8	0	71	PM

Gleason Dr — EASTBOUND

AM	NOON	PM	
587	0	179	
0	0	0	0
172	0	56	1
99	0	258	1
6	0	14	0
AM	NOON	PM	

WESTBOUND — Gleason Dr

	PM	NOON	AM
1	3	0	88
1	106	0	333
1	2	0	21
0	0	0	3
	272	0	167
	PM	NOON	AM

Brannigan St — NORTHBOUND

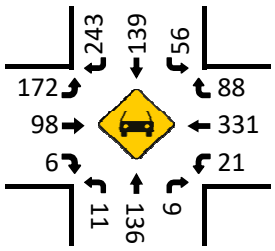
PM	33	0	12	12	6	PM
NOON	0	0	0	0	0	NOON
AM	167	0	11	136	9	AM

Turning movements (left, through, right, U-turn):

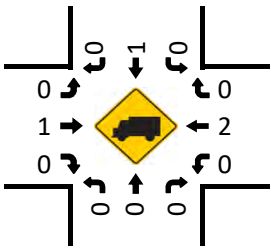
	Left	Through	Right	U-turn
Southbound	1	1	1	0
Westbound	1	1	1	0
Northbound	0	1	0.5	0.5

CONTROL			
Signalized			
TEV	1317	0	555
	AM	NOON	PM
PHF	0.62		0.86

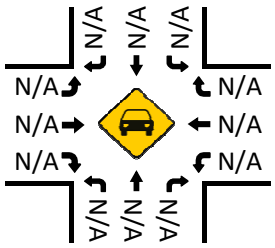
Cars (AM)



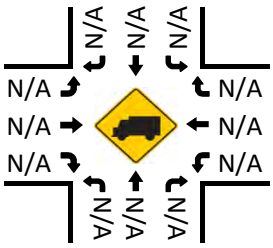
HT (AM)



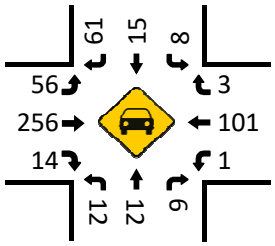
Cars (NOON)



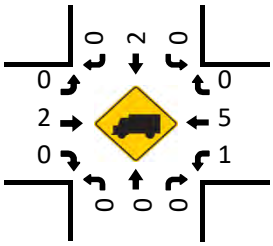
HT (NOON)



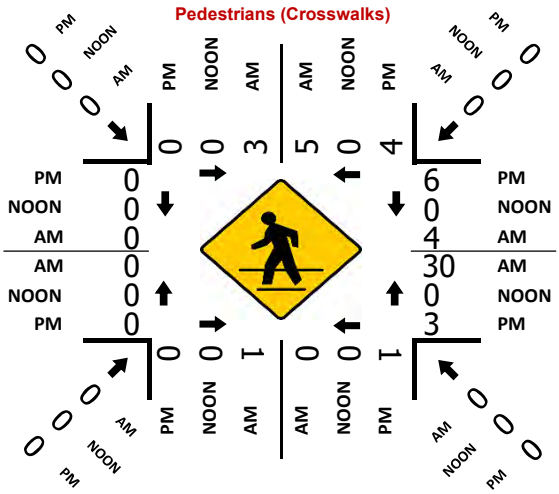
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Grafton St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-013
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Grafton St — SOUTHBOUND

AM	127	50	73	0	167	AM
NOON	0	0	0	0	0	NOON
PM	40	14	24	0	91	PM
	0.5	0.5	1	0		

Gleason Dr — EASTBOUND

AM	NOON	PM	
446	0	111	
0	0	0	0
23	0	59	1
117	0	173	3
38	0	31	0

Gleason Dr — WESTBOUND

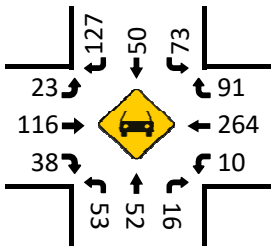
	PM	NOON	AM
1	23	0	92
2	58	0	266
1	5	0	10
0	0	0	1
	202	0	207

Grafton St — NORTHBOUND

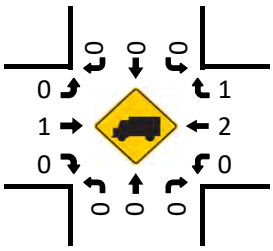
	0	1	0.5	0.5		
PM	50	0	13	9	5	PM
NOON	0	0	0	0	0	NOON
AM	98	0	53	52	16	AM

CONTROL			
Signalized			
TEV	918	0	454
	AM	NOON	PM
PHF	0.67		0.92

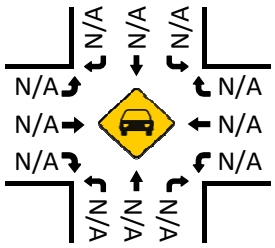
Cars (AM)



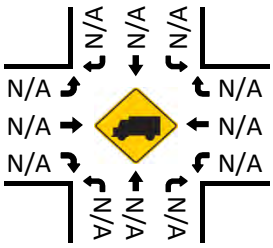
HT (AM)



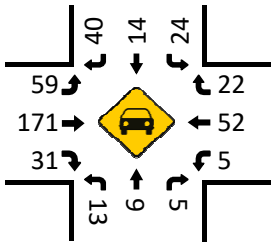
Cars (NOON)



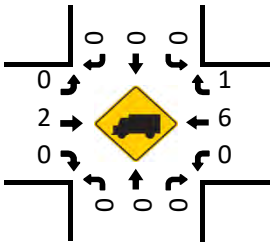
HT (NOON)



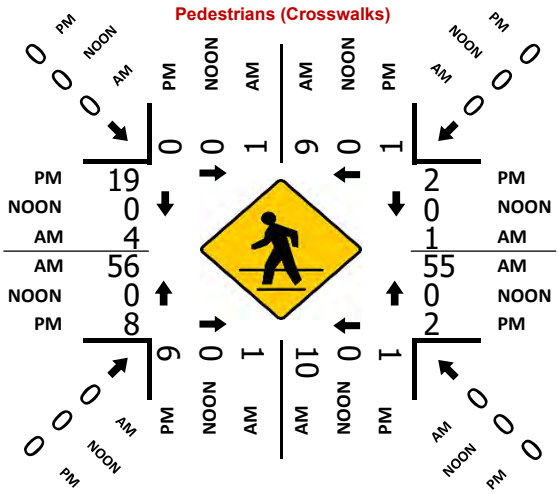
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Fallon Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-014
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Fallon Rd)

AM	96	1108	104	2	546	AM
NOON	0	0	0	0	0	NOON
PM	55	674	26	1	787	PM
	1	3	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM		
377	0	172	⇦	
2	0	2	↶	0
35	0	51	↱	2
188	0	45	→	1
89	0	80	↷	2
AM	NOON	PM		

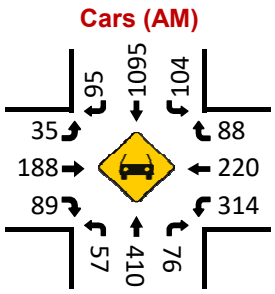
WESTBOUND (Central Pkwy)

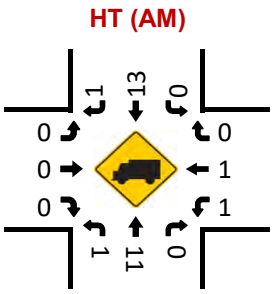
PM	NOON	AM		
27	0	88	↰	1
37	0	221	←	1
122	0	315	↶	2
0	0	0	↶	0
191	0	368	⇨	
PM	NOON	AM		

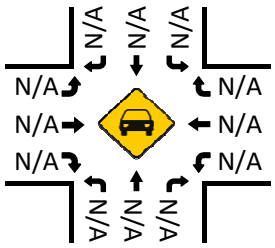
NORTHBOUND (Fallon Rd)

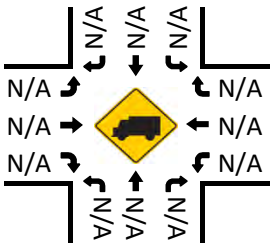
PM	881	5	78	708	120	PM
NOON	0	0	0	0	0	NOON
AM	1514	2	58	421	76	AM
		0	2	3	1	

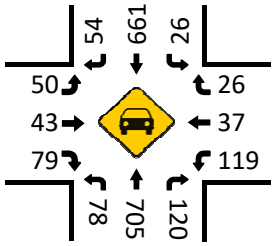
CONTROL			
Signalized			
TEV	2805 AM	0 NOON	2031 PM
PHF	0.84		0.95

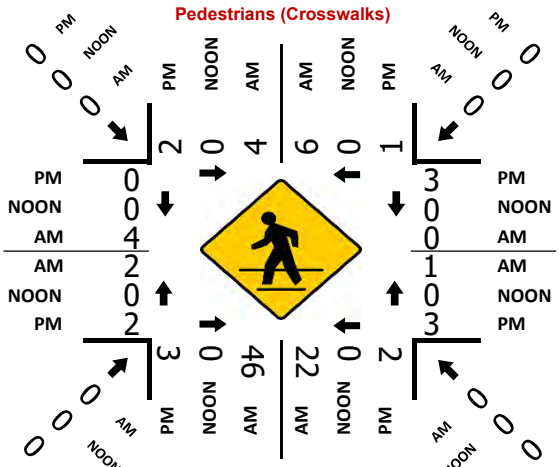


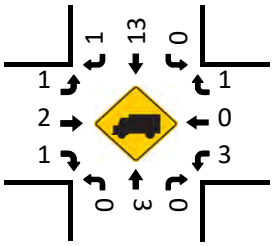












Prepared by National Data & Surveying Services

Chancery Ln & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-015
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Chancery Ln)

AM	55	6	3	0	31	AM
NOON	0	0	0	0	0	NOON
PM	10	4	3	0	28	PM
	0.5	0.5	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
457	0	174	
0	0	0	0
13	0	21	1
115	0	203	1
6	0	9	1

WESTBOUND (Central Pkwy)

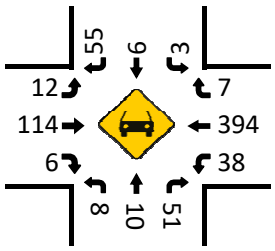
	PM	NOON	AM
1	4	0	8
1	154	0	394
1	5	0	38
0	0	0	1
	217	0	170

NORTHBOUND (Chancery Ln)

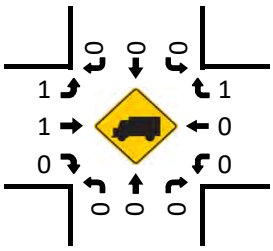
PM	18	0	10	3	11	PM
NOON	0	0	0	0	0	NOON
AM	50	0	8	10	51	AM
		0	1	0.5	0.5	

CONTROL			
Signalized			
TEV	708	0	437
	AM	NOON	PM
PHF	0.80		0.94

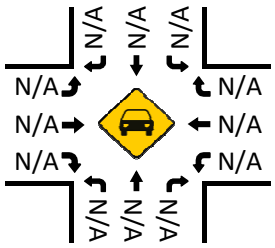
Cars (AM)



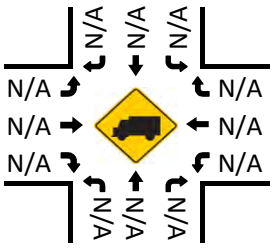
HT (AM)



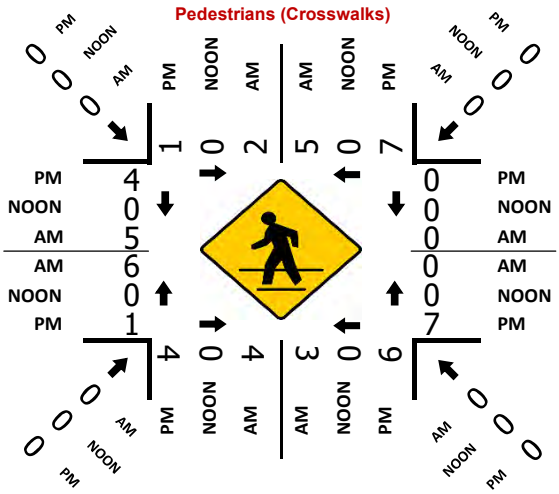
Cars (NOON)



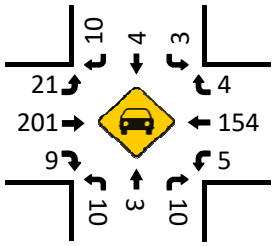
HT (NOON)



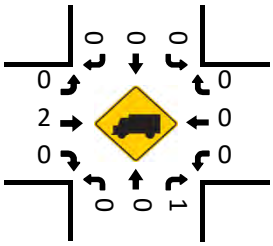
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Brannigan St & Finnian Way

Peak Hour Turning Movement Count

ID: 19-08581-016
City: Dublin

Day: Wednesday
Date: 11/13/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	0	137	5	0	65	AM
NOON	0	0	0	0	0	NOON
PM	0	45	4	0	69	PM

Finnian Way — EASTBOUND

AM	NOON	PM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

AM NOON PM

Finnian Way — WESTBOUND

PM	NOON	AM
6	0	13
0	0	0
19	0	30
0	0	1
48	0	18

PM NOON AM

Brannigan St — NORTHBOUND

PM	65	1	0	63	44	PM
NOON	0	0	0	0	0	NOON
AM	167	0	0	52	12	AM

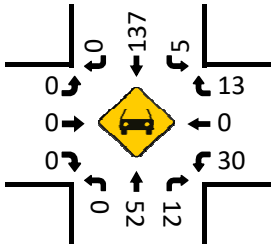
Turning movements (red): 0 1 0 0 — 0 1 0 0 — 0 0 1 0

CONTROL

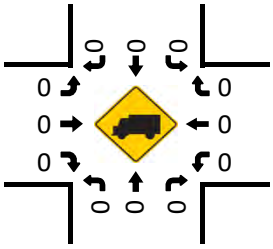
3-Way Stop (NB/SB/WB)

TEV	250 AM	0 NOON	182 PM
PHF	0.74		0.88

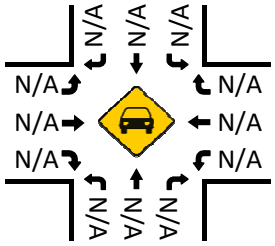
Cars (AM)



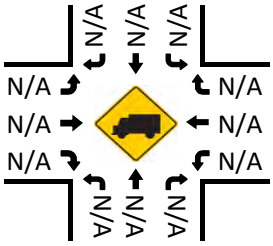
HT (AM)



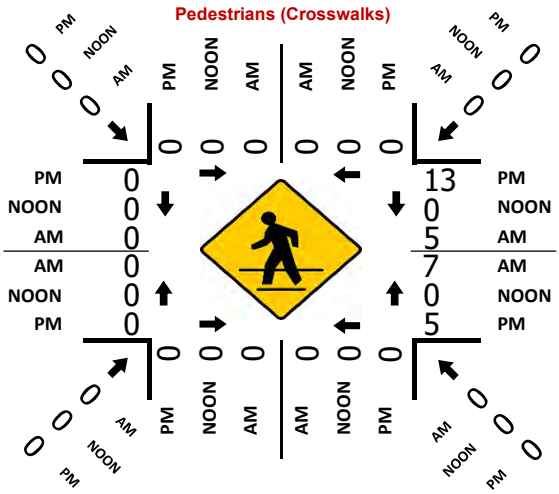
Cars (NOON)



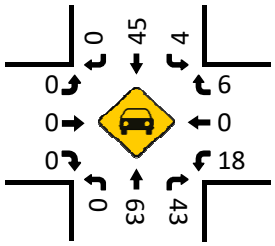
HT (NOON)



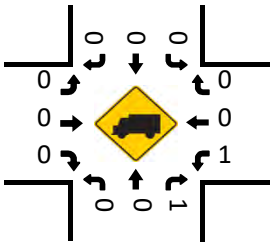
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Tassajara Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-001
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Tassajara Rd)

AM	141	1111	16	1	588	AM
NOON	0	0	0	0	0	NOON
PM	40	822	20	0	822	PM
	1	2	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
386	0	131	
21	0	2	0
79	0	51	1
115	0	140	1
67	0	91	1

WESTBOUND (Central Pkwy)

	PM	NOON	AM
0.5	17	0	26
0.5	56	0	204
2	128	0	249
0	0	0	0
	321	0	185

NORTHBOUND (Tassajara Rd)

PM	1060	19	33	754	161	PM
NOON	0	0	0	0	0	NOON
AM	1433	6	20	482	54	AM
		0	1	1	1	

CONTROL			
Signalized			
TEV	2592	0	2334
	AM	NOON	PM
PHF	0.85		0.93

Cars (AM)

77	141	1104	16	26
115				202
66	20	477	53	248

HT (AM)

2	0	7	0	0
0				2
1	0	5	1	1

Cars (NOON)

N/A	N/A	N/A	N/A	N/A
N/A				N/A
N/A	N/A	N/A	N/A	N/A

HT (NOON)

N/A	N/A	N/A	N/A	N/A
N/A				N/A
N/A	N/A	N/A	N/A	N/A

Cars (PM)

48	40	817	20	17
138				54
89	33	750	160	125

HT (PM)

3	0	5	0	0
2				2
2	0	4	1	3

Pedestrians (Crosswalks)

PM	3	0	2	1	0	0	0	0	0	0	PM
NOON	0	0	0	0	0	0	0	0	0	0	NOON
AM	6	0	4	1	0	0	0	0	0	0	AM
AM	7	0	2	1	0	0	0	0	0	0	AM
NOON	0	0	0	0	0	0	0	0	0	0	NOON
PM	4	0	4	3	0	0	0	0	0	0	PM

Prepared by National Data & Surveying Services

Brannigan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-002
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
03:15 PM - 04:15 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	84	84	17	0	157	AM
NOON	0	0	0	0	0	NOON
PM	64	52	11	0	75	PM
	0.5	0.5	1	0		

EASTBOUND — Central Pkwy

AM	NOON	PM	
481	0	271	
0	0	0	0
74	0	37	1
107	0	202	1
5	0	15	0

WESTBOUND — Central Pkwy

	PM	NOON	AM
1	5	0	27
1	197	0	386
1	9	0	11
0	1	0	4
	233	0	142

CONTROL

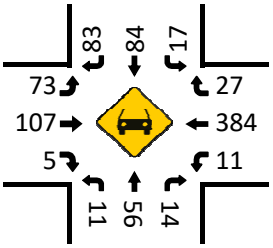
Signalized

TEV	880 AM	0 NOON	655 PM
PHF	0.73		0.72

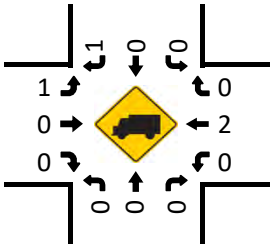
Brannigan St — NORTHBOUND

PM	76	0	10	33	19	PM
NOON	0	0	0	0	0	NOON
AM	100	0	11	56	14	AM
		0	1	0.5	0.5	

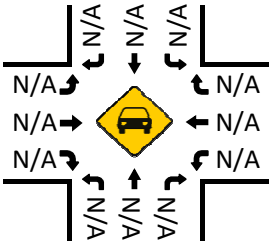
Cars (AM)



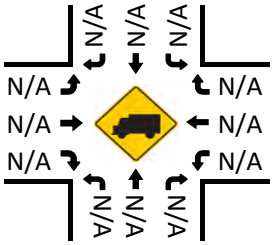
HT (AM)



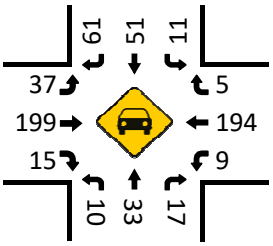
Cars (NOON)



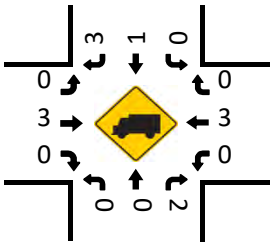
HT (NOON)



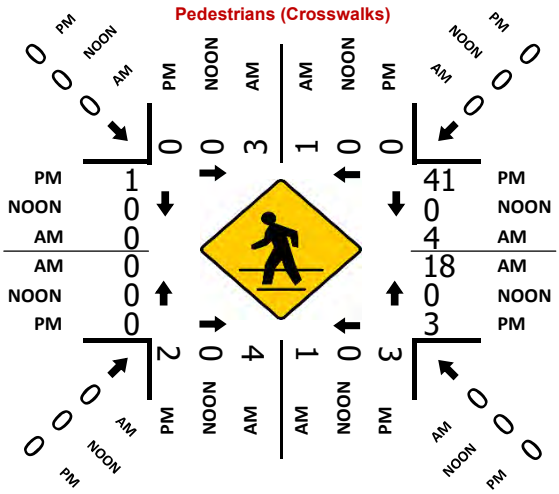
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Grafton St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-003
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Grafton St)

AM	112	0	26	0	63	AM
NOON	0	0	0	0	0	NOON
PM	35	0	13	0	75	PM
	1	0	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
418	0	171	
1	0	1	0
45	0	71	1
121	0	212	1
0	0	0	1

WESTBOUND (Central Pkwy)

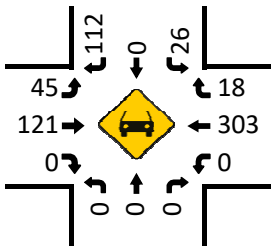
	PM	NOON	AM
1	4	0	18
1	135	0	305
1	0	0	0
0	1	0	7
	226	0	154

NORTHBOUND (Grafton St)

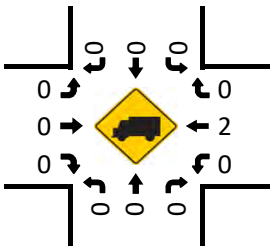
PM	0	0	0	0	PM
NOON	0	0	0	0	NOON
AM	0	0	0	0	AM
	0	0	0	0	

CONTROL			
Signalized			
TEV	635 AM	0 NOON	472 PM
PHF	0.70		0.91

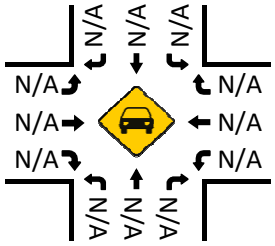
Cars (AM)



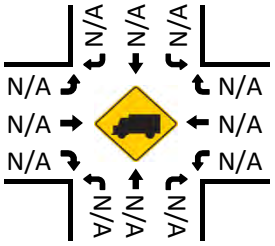
HT (AM)



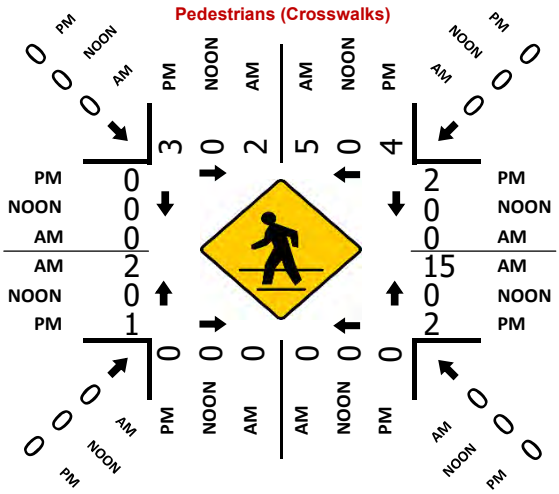
Cars (NOON)



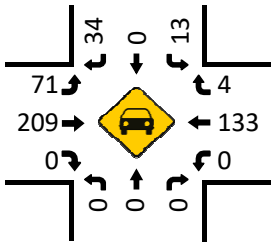
HT (NOON)



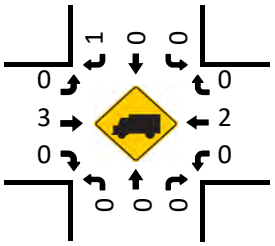
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Keegan St & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-004
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

Keegan St — SOUTHBOUND

AM	41	64	15	0	144	AM
NOON	0	0	0	0	0	NOON
PM	23	16	16	0	82	PM
	0.5	0.5	1	0		

Central Pkwy — EASTBOUND

AM	NOON	PM	
328	0	137	
1	0	0	0
41	0	29	1
76	0	170	1
39	0	26	1

WESTBOUND — Central Pkwy

PM	NOON	AM	
21	0	27	1
100	0	258	1
14	0	42	1
1	0	0	0
205	0	120	

Keegan St — NORTHBOUND

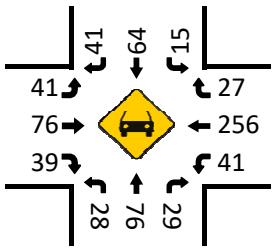
	0	1	1	0		
PM	56	0	14	32	18	PM
NOON	0	0	0	0	0	NOON
AM	145	0	28	76	29	AM

CONTROL

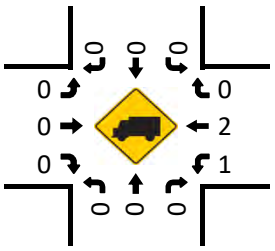
Signalized

TEV	737	0	480
	AM	NOON	PM
PHF	0.69		0.92

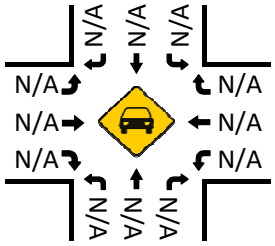
Cars (AM)



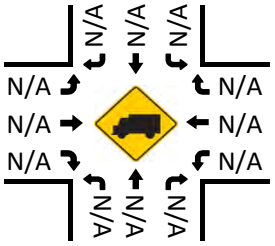
HT (AM)



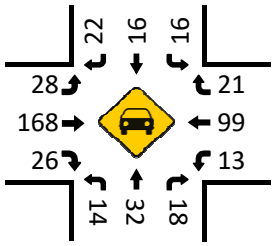
Cars (NOON)



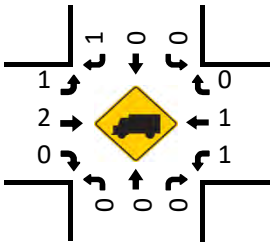
HT (NOON)



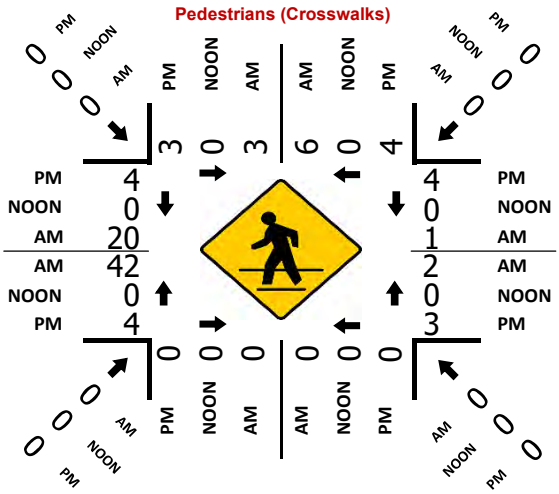
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Tassajara Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-005
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Tassajara Rd)

AM	141	1244	29	1	543	AM
NOON	0	0	0	0	0	NOON
PM	128	803	63	0	918	PM
	2	4	2	0		

EASTBOUND (Dublin Blvd)

AM	NOON	PM	
898	0	724	
3	0	17	0
81	0	266	2
168	0	658	3
155	0	438	2

WESTBOUND (Dublin Blvd)

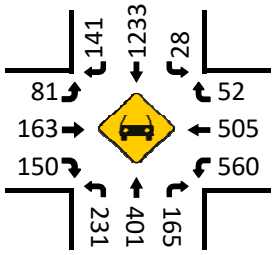
	PM	NOON	AM
0	45	0	53
2	300	0	518
3	334	0	561
0	0	0	0
	1032	0	368

NORTHBOUND (Tassajara Rd)

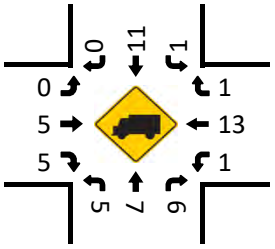
PM	1575	0	279	607	311	PM
NOON	0	0	0	0	0	NOON
AM	1960	0	236	408	171	AM
		0	3	2	1	

CONTROL			
Signalized			
TEV	3769	0	4249
	AM	NOON	PM
PHF	0.95		0.95

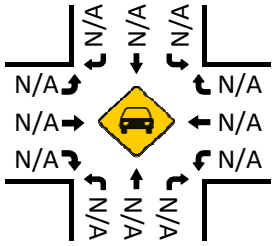
Cars (AM)



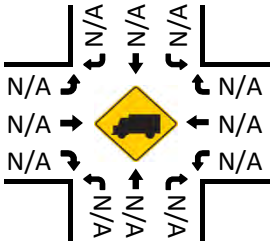
HT (AM)



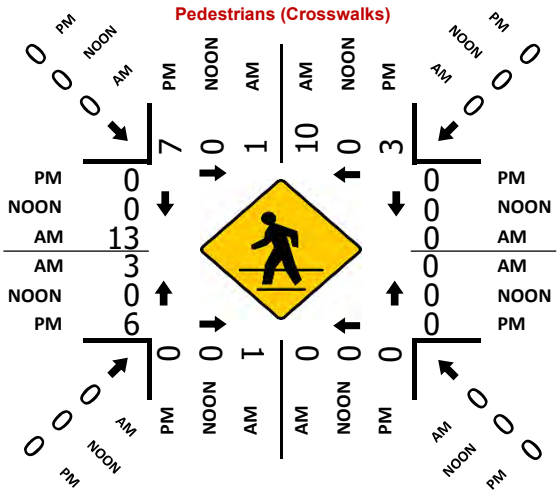
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM 0
NOON 0
AM 13
AM 3
NOON 0
PM 6
7
0
1
10
0
3
0
0
0

Prepared by National Data & Surveying Services

Brannigan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-006
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	107	3	30	0	60	AM
NOON	0	0	0	0	0	NOON
PM	39	4	24	0	104	PM
	0.5	0.5	1	0		

Dublin Blvd — EASTBOUND

AM	NOON	PM		
1127	0	682	⇦	
1	0	2	↶	0
40	0	69	↱	1
292	0	896	→	2
32	0	68	↷	1
AM	NOON	PM		

Dublin Blvd — WESTBOUND

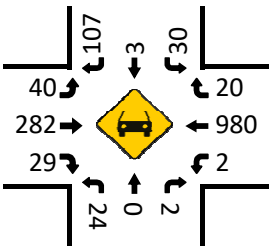
PM	NOON	AM		
30	0	20	↰	1
571	0	994	←	2
3	0	2	↰	1
5	0	7	↶	0
926	0	331	⇨	
PM	NOON	AM		

Brannigan St — NORTHBOUND

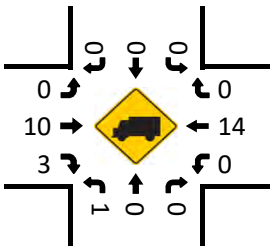
PM	75	0	70	5	1	PM
NOON	0	0	0	0	0	NOON
AM	37	0	25	0	2	AM
		0	1	0.5	0.5	

CONTROL			
Signalized			
TEV	1555	0	1787
	AM	NOON	PM
PHF	0.96		0.96

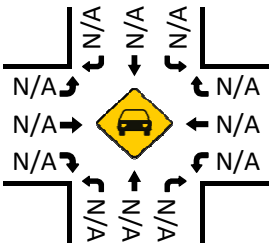
Cars (AM)



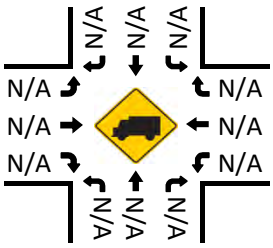
HT (AM)



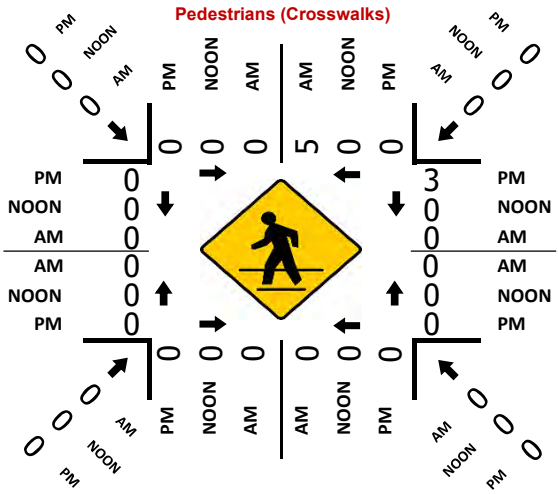
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
5
0
0
0
0
3
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Grafton St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-007
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Grafton St)

AM	9	0	4	0	4	AM
NOON	0	0	0	0	0	NOON
PM	1	0	2	0	0	PM

EASTBOUND (Dublin Blvd)

AM	NOON	PM		
983	0	613	⇦	
8	0	38	↰	0
4	0	0	↱	1
311	0	844	→	3
16	0	42	↳	1

WESTBOUND (Dublin Blvd)

	PM	NOON	AM
1	0	0	0
3	510	0	925
1	41	0	36
0	17	0	26
⇨	914	0	363

NORTHBOUND (Grafton St)

PM	83	0	64	0	51	PM
NOON	0	0	0	0	0	NOON
AM	52	0	41	0	22	AM

	0	1	0	0
	0	2	1	1

CONTROL			
Signalized			
TEV	1402 AM	0 NOON	1610 PM
PHF	0.89		0.95

Cars (AM)

4	0	2
2		0
302		915
16		35
40	0	21

HT (AM)

5	0	2
2		0
9		10
0		1
1	0	1

Cars (NOON)

N/A	N/A	N/A
N/A		N/A
N/A		N/A
N/A		N/A
N/A	N/A	N/A

HT (NOON)

N/A	N/A	N/A
N/A		N/A
N/A		N/A
N/A		N/A
N/A	N/A	N/A

Cars (PM)

0	0	1
0		0
833		504
41		39
63	0	51

HT (PM)

1	0	1
0		0
11		6
1		2
1	0	0

Pedestrians (Crosswalks)

PM	7	5	0	4	11	0	6	1	PM
NOON	0							0	NOON
AM	0							3	AM
AM	4							1	AM
NOON	0							0	NOON
PM	4	2	0	1	4	0	2	4	PM
	PM	NOON	AM	AM	NOON	PM			

Prepared by National Data & Surveying Services

Keegan St & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-008
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

SOUTHBOUND (Keegan St)

AM	282	4	36	0	90	AM
NOON	0	0	0	0	0	NOON
PM	119	2	23	0	168	PM
	1	0	1	0		

EASTBOUND (Dublin Blvd)

AM	NOON	PM		
898	0	530		
0	0	2	0	
70	0	144	2	
196	0	627	2	
75	0	51	1	

WESTBOUND (Dublin Blvd)

	PM	NOON	AM
1	22	0	20
3	327	0	596
1	5	0	7
0	0	0	0
	650	0	240

NORTHBOUND (Keegan St)

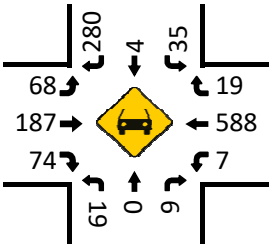
	0	2	1	1		
PM	58	0	82	2	0	PM
NOON	0	0	0	0	0	NOON
AM	86	0	20	0	8	AM

CONTROL

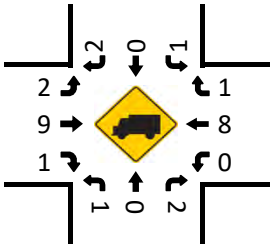
Signalized

	AM	NOON	PM
TEV	1314	0	1406
PHF	0.93		0.96

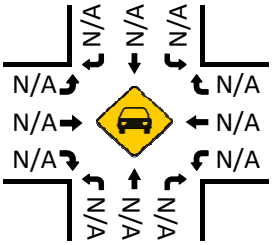
Cars (AM)



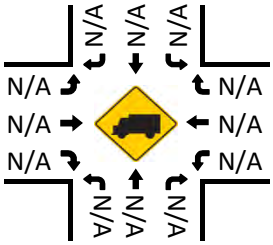
HT (AM)



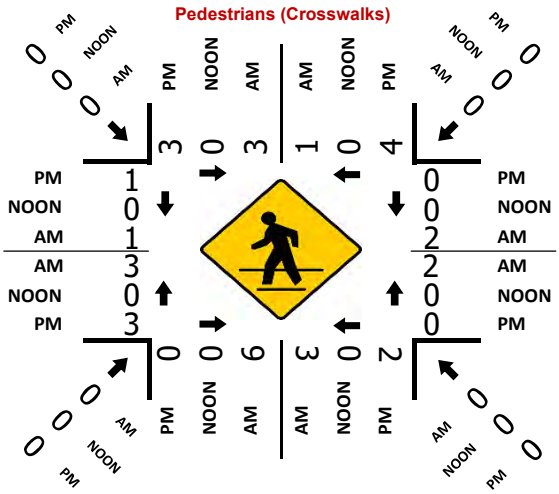
Cars (NOON)



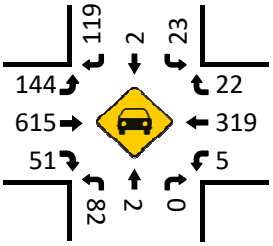
HT (NOON)



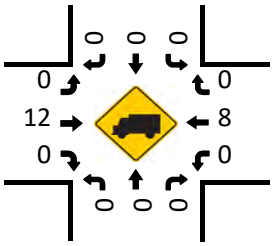
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Fallon Rd & Dublin Blvd

Peak Hour Turning Movement Count

ID: 19-08581-009
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Fallon Rd — SOUTHBOUND

AM	227	1133	0	0	716	AM
NOON	0	0	0	0	0	NOON
PM	153	768	1	0	899	PM
	1	2	1	0		

EASTBOUND — Dublin Blvd

AM	NOON	PM	
617	0	287	
2	0	1	0
131	0	239	1.5
0	0	0	0.5
207	0	444	2

WESTBOUND — Dublin Blvd

	PM	NOON	AM
0.5	0	0	0
0.5	0	0	0
1	0	0	0
0	0	0	0
	1	0	0

CONTROL

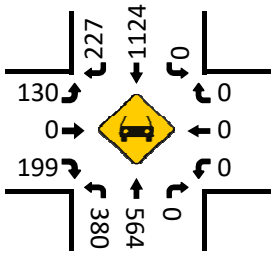
Signalized

	AM	NOON	PM
TEV	2673	0	2399
PHF	0.95		0.96

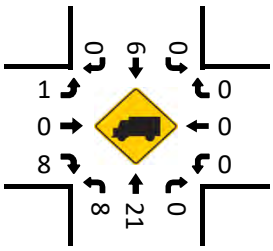
Fallon Rd — NORTHBOUND

	0	2	2	0		
PM	1212	0	133	660	0	PM
NOON	0	0	0	0	0	NOON
AM	1340	0	388	585	0	AM

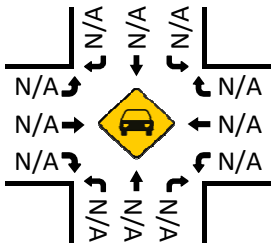
Cars (AM)



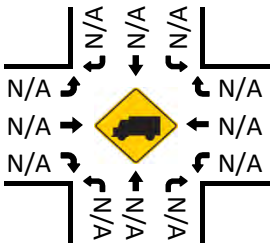
HT (AM)



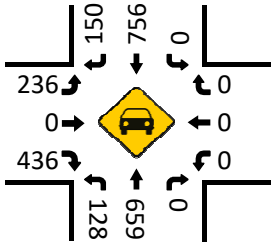
Cars (NOON)



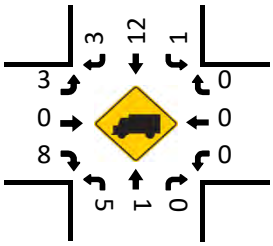
HT (NOON)



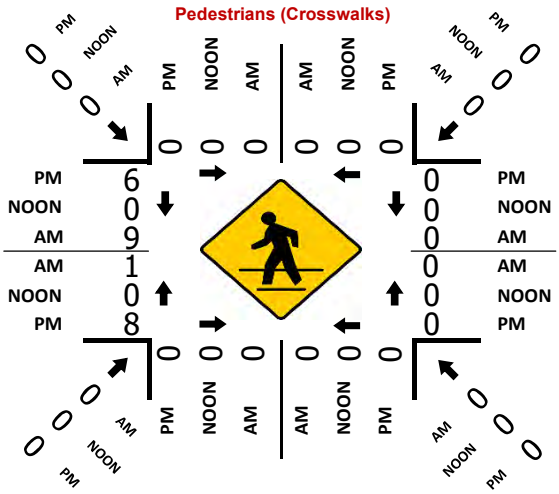
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Fallon Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-010
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Fallon Rd — SOUTHBOUND

AM	108	688	0	0	548	AM
NOON	0	0	0	0	0	NOON
PM	54	449	0	0	507	PM

1 2 0 0

Gleason Dr — EASTBOUND

AM	NOON	PM	
430	0	207	⇦
1	0	0	↶ 0
52	0	66	↱ 2
0	0	0	→ 0
189	0	226	↳ 2

CONTROL

Signalized

	AM	NOON	PM
TEV	1859	0	1391
PHF	0.78		0.75

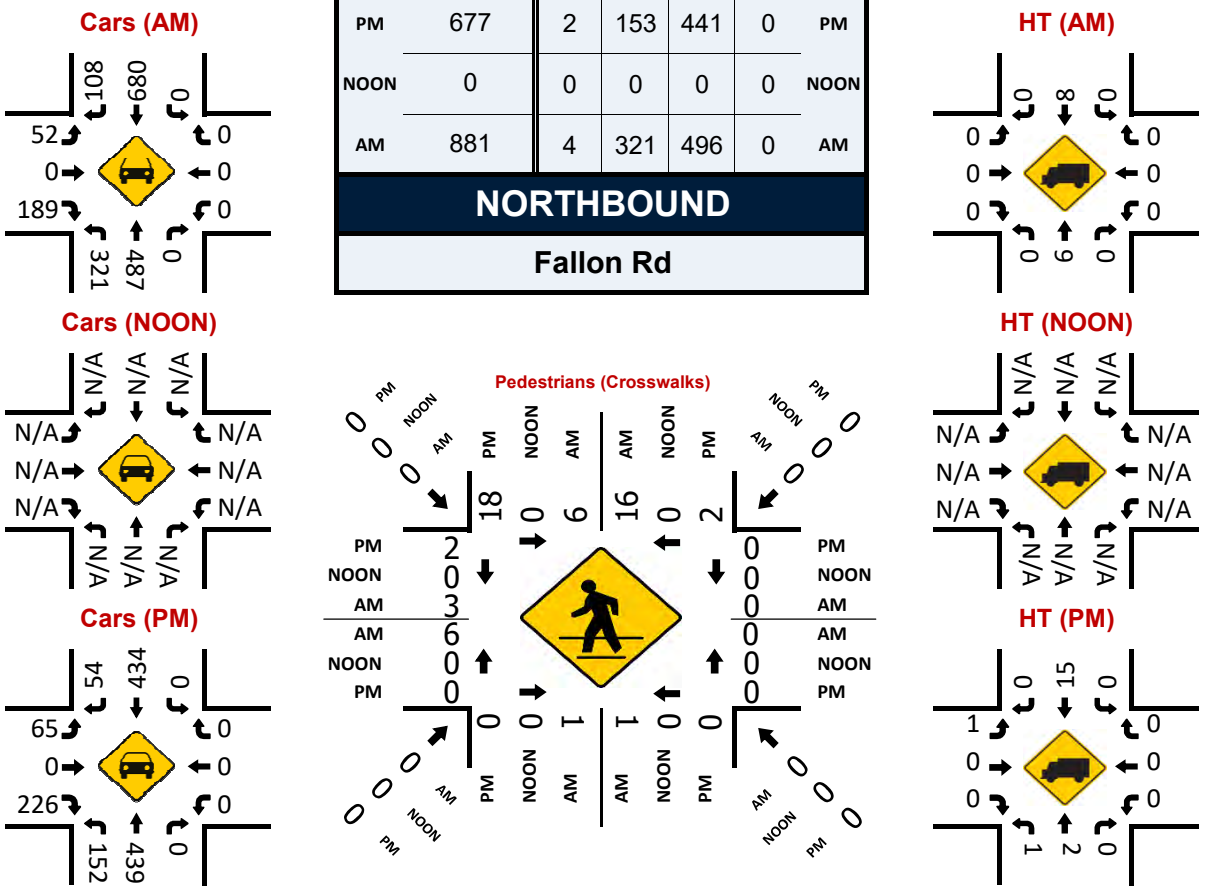
Gleason Dr — WESTBOUND

	PM	NOON	AM
0 ↰	0	0	0
0 ←	0	0	0
0 ↶	0	0	0
0 ↷	0	0	0
⇨	0	0	0

0 1 3 0

Fallon Rd — NORTHBOUND

PM	677	2	153	441	0	PM
NOON	0	0	0	0	0	NOON
AM	881	4	321	496	0	AM



Prepared by National Data & Surveying Services

Tassajara Rd & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-011
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

Tassajara Rd — SOUTHBOUND

AM	282	982	67	4	538	AM
NOON	0	0	0	0	0	NOON
PM	96	641	21	1	902	PM

Gleason Dr — EASTBOUND

AM	NOON	PM	
653	0	241	
0	0	1	0
93	0	249	2
134	0	186	1
59	0	129	1

WESTBOUND — Gleason Dr

	PM	NOON	AM
0.5	30	0	54
0.5	76	0	268
2	100	0	190
0	0	0	0
	328	0	324

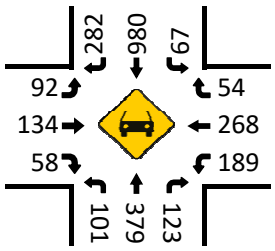
Tassajara Rd — NORTHBOUND

PM	870	0	68	622	121	PM
NOON	0	0	0	0	0	NOON
AM	1231	0	103	387	123	AM

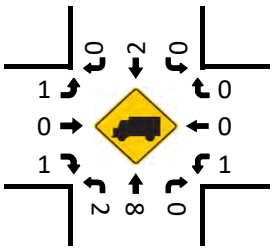
Turning movements (AM): 1, 2, 1, 0 — 0, 2, 2, 1

CONTROL			
Signalized			
TEV	2746 AM	0 NOON	2341 PM
PHF	0.85		0.95

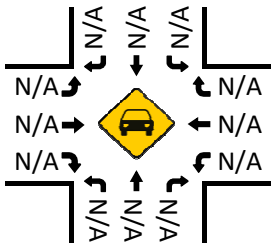
Cars (AM)



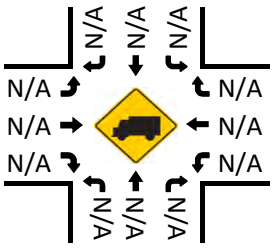
HT (AM)



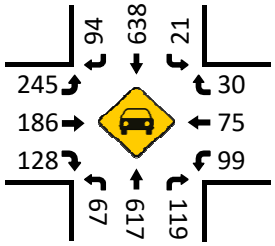
Cars (NOON)



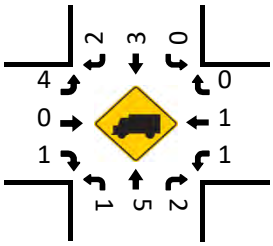
HT (NOON)



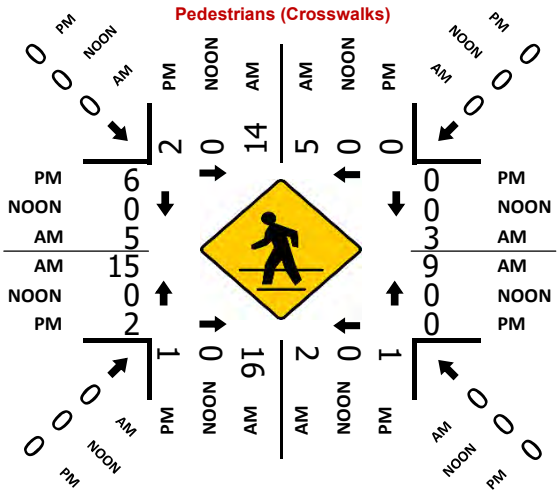
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Brannigan St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-012
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	242	134	48	0	388	AM
NOON	0	0	0	0	0	NOON
PM	171	86	42	0	198	PM
	1	1	1	0		

Gleason Dr — EASTBOUND

AM	NOON	PM	
537	0	312	
0	0	0	0
175	0	111	1
114	0	197	1
5	0	7	0
AM	NOON	PM	

Gleason Dr — WESTBOUND

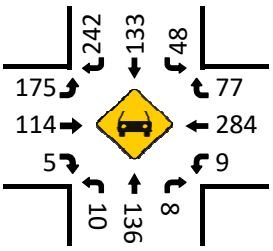
	PM	NOON	AM
1	28	0	77
1	131	0	285
1	8	0	9
0	7	0	4
	259	0	174
	PM	NOON	AM

Brannigan St — NORTHBOUND

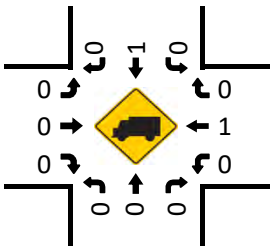
PM	101	0	10	59	13	PM
NOON	0	0	0	0	0	NOON
AM	148	0	10	136	8	AM
		0	1	0.5	0.5	

CONTROL			
Signalized			
TEV	1247	0	870
	AM	NOON	PM
PHF	0.60		0.61

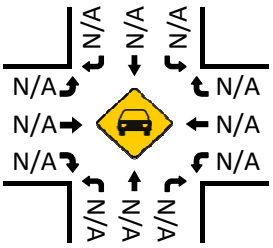
Cars (AM)



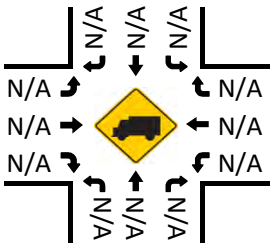
HT (AM)



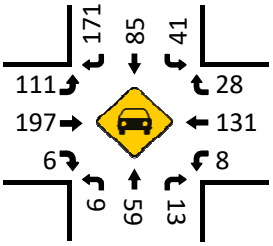
Cars (NOON)



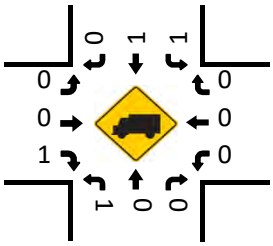
HT (NOON)



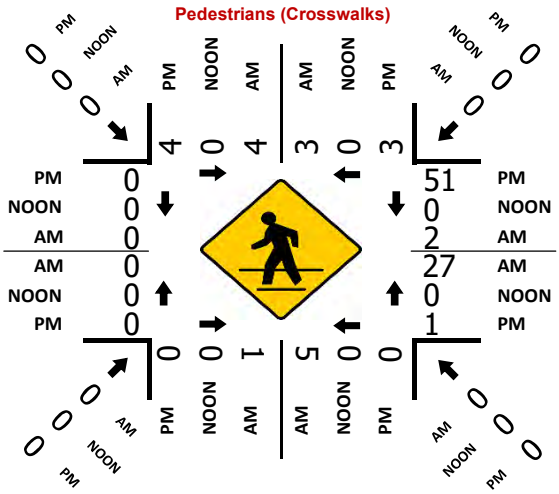
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Grafton St & Gleason Dr

Peak Hour Turning Movement Count

ID: 19-08581-013
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Grafton St — SOUTHBOUND

AM	90	41	97	0	200	AM
NOON	0	0	0	0	0	NOON
PM	60	30	72	0	131	PM
	0.5	0.5	1	0		

Gleason Dr — EASTBOUND

AM	NOON	PM	
337	0	179	
0	0	0	0
36	0	52	1
120	0	172	3
28	0	33	0
AM	NOON	PM	

Gleason Dr — WESTBOUND

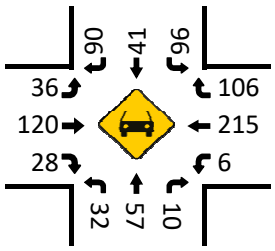
PM	NOON	AM	
57	0	107	1
95	0	215	2
8	0	6	1
1	0	0	0
252	0	227	
PM	NOON	AM	

Grafton St — NORTHBOUND

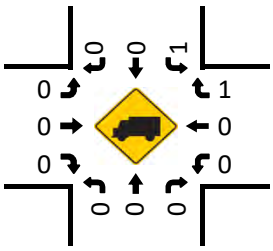
	0	1	0.5	0.5		
PM	71	0	24	22	7	PM
NOON	0	0	0	0	0	NOON
AM	75	0	32	57	10	AM

CONTROL			
Signalized			
TEV	839	0	633
	AM	NOON	PM
PHF	0.66		0.60

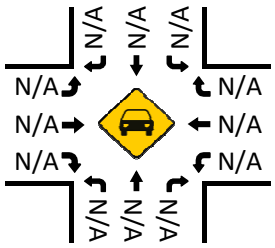
Cars (AM)



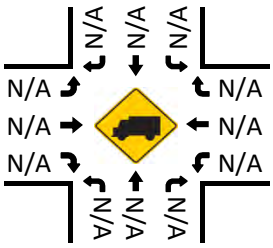
HT (AM)



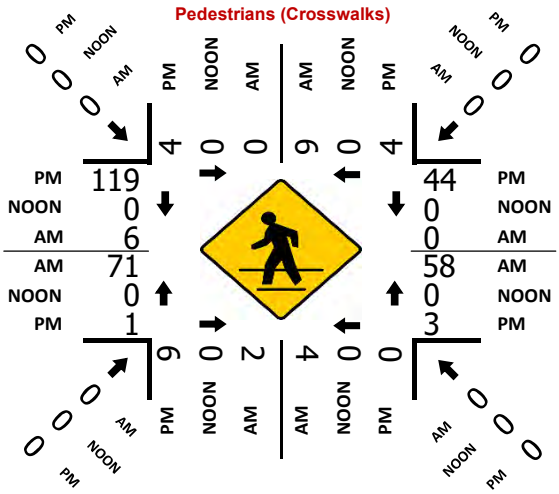
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM 119
NOON 0
AM 6
AM 71
NOON 0
PM 1
4
0
0
6
0
4
PM 44
NOON 0
AM 0
AM 58
NOON 0
PM 3
0
0
0
0

Prepared by National Data & Surveying Services

Fallon Rd & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-014
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	03:00 PM - 05:00 PM

SOUTHBOUND (Fallon Rd)

AM	71	1016	108	1	701	AM
NOON	0	0	0	0	0	NOON
PM	65	722	29	0	779	PM

1 3 1 0

EASTBOUND (Central Pkwy)

AM	NOON	PM	
368	0	185	
2	0	0	0
36	0	67	2
183	0	51	1
78	0	80	2

WESTBOUND (Central Pkwy)

PM	NOON	AM	
25	0	108	1
51	0	224	1
137	0	286	2
0	0	0	0
221	0	397	

NORTHBOUND (Fallon Rd)

PM	945	6	69	687	141	PM
NOON	0	0	0	0	0	NOON
AM	1385	5	71	556	106	AM

0 2 3 1

CONTROL			
Signalized			
TEV	2851	0	2130
	AM	NOON	PM
PHF	0.82		0.91

Cars (AM)

36	70	1007
182		108
78	68	538
	105	223
		286

HT (AM)

0	1	6
1		0
0	3	18
	1	0
		0

Cars (NOON)

N/A	N/A	N/A
N/A		N/A
N/A	N/A	N/A
	N/A	N/A
		N/A

HT (NOON)

N/A	N/A	N/A
N/A		N/A
N/A	N/A	N/A
	N/A	N/A
		N/A

Cars (PM)

67	62	711
49		25
79	68	684
	141	51
		133

HT (PM)

0	3	11
2		0
1	1	3
	0	0
		4

Pedestrians (Crosswalks)

PM	3	1	0	1	7	0	3	1	0	0	PM
NOON	0	0	0	0	0	0	0	0	0	0	NOON
AM	3	0	0	0	1	0	0	0	0	0	AM
AM	2	0	0	0	1	0	0	7	0	0	AM
NOON	0	0	0	0	0	0	0	0	0	0	NOON
PM	6	1	0	1	74	0	32	9	0	0	PM
	AM	NOON	PM	AM	NOON	PM	AM	NOON	PM	AM	NOON

Prepared by National Data & Surveying Services

Chancery Ln & Central Pkwy

Peak Hour Turning Movement Count

ID: 19-08581-015
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	03:00 PM - 05:00 PM

SOUTHBOUND (Chancery Ln)

AM	47	7	2	0	34	AM
NOON	0	0	0	0	0	NOON
PM	31	2	7	0	52	PM
	0.5	0.5	1	0		

EASTBOUND (Central Pkwy)

AM	NOON	PM	
431	0	178	
4	0	0	0
14	0	37	1
117	0	266	1
6	0	12	1

WESTBOUND (Central Pkwy)

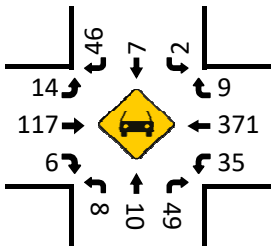
	PM	NOON	AM
1	11	0	10
1	141	0	372
1	14	0	35
0	0	0	1
	286	0	169

NORTHBOUND (Chancery Ln)

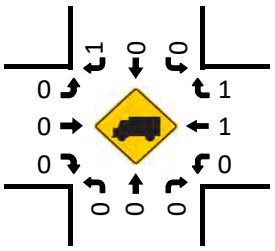
	0	1	0.5	0.5	
PM	28	0	6	4	13	PM
NOON	0	0	0	0	0	NOON
AM	48	0	8	10	49	AM

CONTROL			
Signalized			
TEV	682 AM	0 NOON	544 PM
PHF	0.79		0.87

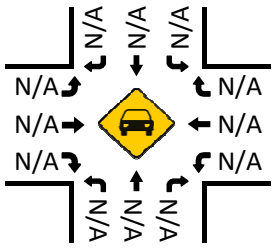
Cars (AM)



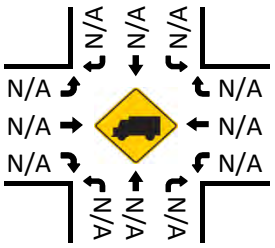
HT (AM)



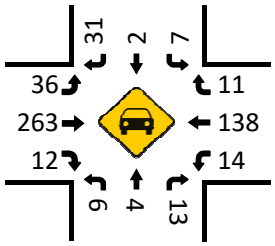
Cars (NOON)



HT (NOON)



Cars (PM)



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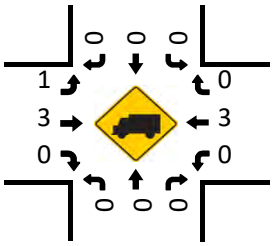
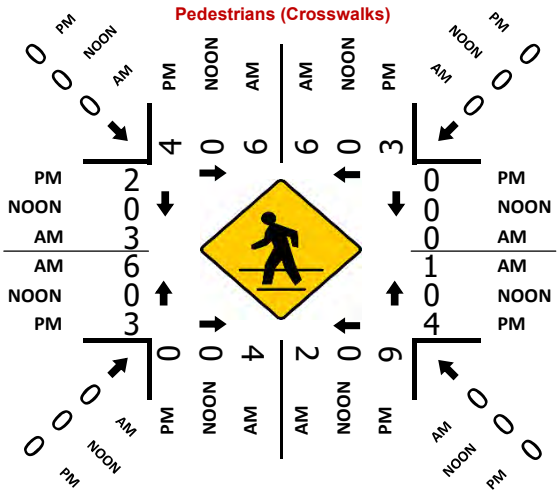


Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Brannigan St & Finnian Way

Peak Hour Turning Movement Count

ID: 19-08581-016
City: Dublin

Day: Thursday
Date: 11/14/2019

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NONE	NONE
03:00 PM - 04:00 PM	03:00 PM - 05:00 PM

Brannigan St — SOUTHBOUND

AM	0	121	8	0	73	AM
NOON	0	0	0	0	0	NOON
PM	0	87	7	0	61	PM

Finnian Way — EASTBOUND

AM	NOON	PM
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

AM NOON PM

Finnian Way — WESTBOUND

PM	NOON	AM
7	0	17
0	0	0
14	0	38
0	0	0
39	0	15

PM NOON AM

Brannigan St — NORTHBOUND

PM	102	1	0	54	32	PM
NOON	0	0	0	0	0	NOON
AM	159	0	0	56	7	AM

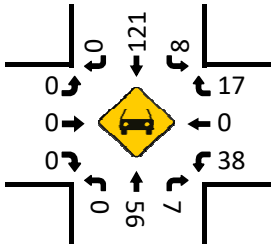
Turning movements (red): 0 1 0 0 (southbound); 0 1 0 0 (eastbound); 0 0 1 0 (northbound)

CONTROL

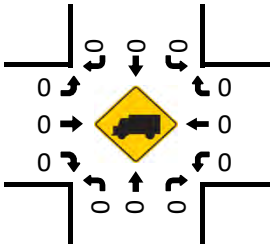
3-Way Stop (NB/SB/WB)

TEV	247	0	202
	AM	NOON	PM
PHF	0.82		0.86

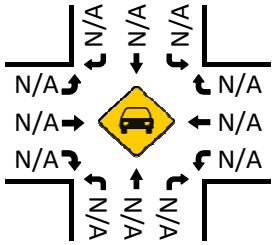
Cars (AM)



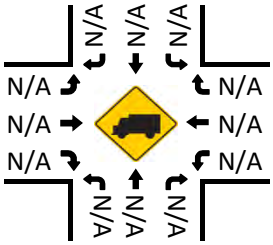
HT (AM)



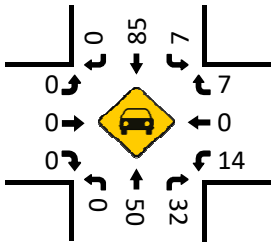
Cars (NOON)



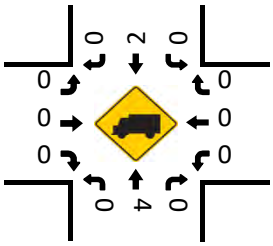
HT (NOON)



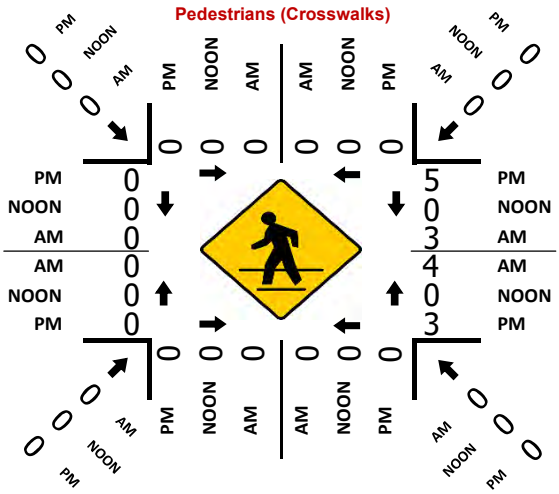
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Attachment B: LOS Calculation Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	108	67	266	207	23	29	515	64	12	1176	140
Future Volume (veh/h)	98	108	67	266	207	23	29	515	64	12	1176	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	114	126	42	309	241	24	34	599	14	14	1367	60
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	269	223	338	275	27	75	2074	909	42	2010	873
Arrive On Green	0.08	0.15	0.15	0.10	0.17	0.17	0.04	0.59	0.59	0.02	0.57	0.57
Sat Flow, veh/h	1757	1845	1531	3408	1649	164	1757	3505	1536	1757	3505	1522
Grp Volume(v), veh/h	114	126	42	309	0	265	34	599	14	14	1367	60
Grp Sat Flow(s),veh/h/ln	1757	1845	1531	1704	0	1813	1757	1752	1536	1757	1752	1522
Q Serve(g_s), s	8.7	8.5	3.3	12.2	0.0	19.4	2.6	11.4	0.5	1.1	37.1	2.4
Cycle Q Clear(g_c), s	8.7	8.5	3.3	12.2	0.0	19.4	2.6	11.4	0.5	1.1	37.1	2.4
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	269	223	338	0	302	75	2074	909	42	2010	873
V/C Ratio(X)	0.83	0.47	0.19	0.91	0.00	0.88	0.45	0.29	0.02	0.33	0.68	0.07
Avail Cap(c_a), veh/h	252	521	432	338	0	512	252	2074	909	252	2010	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.00	0.63	0.95	0.95	0.95	0.48	0.48	0.48
Uniform Delay (d), s/veh	61.8	53.2	51.0	60.7	0.0	55.3	63.6	13.7	11.4	65.3	20.3	12.9
Incr Delay (d2), s/veh	9.0	0.9	0.3	20.0	0.0	4.7	3.0	0.3	0.0	1.6	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.4	1.4	6.7	0.0	10.1	1.3	5.6	0.2	0.5	18.1	1.0
LnGrp Delay(d),s/veh	70.7	54.2	51.3	80.7	0.0	60.0	66.6	14.0	11.5	66.9	21.2	13.0
LnGrp LOS	E	D	D	F		E	E	B	B	E	C	B
Approach Vol, veh/h		282			574			647			1441	
Approach Delay, s/veh		60.5			71.2			16.7			21.3	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	24.4	10.3	83.3	15.2	27.3	7.8	85.8
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	13.5	38.4	19.5	39.7	19.5	38.4	19.5	* 38
Max Q Clear Time (g_c+I1), s	14.2	10.5	4.6	39.1	10.7	21.4	3.1	13.4
Green Ext Time (p_c), s	0.0	0.6	0.0	0.5	0.1	1.1	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	33.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	101	4	14	391	25	13	54	14	16	93	92
Future Volume (veh/h)	79	101	4	14	391	25	13	54	14	16	93	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	107	136	4	19	528	15	18	73	11	22	126	96
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	136	793	23	32	712	591	31	258	39	37	165	126
Arrive On Green	0.08	0.45	0.45	0.02	0.39	0.39	0.02	0.17	0.17	0.02	0.17	0.17
Sat Flow, veh/h	1757	1781	52	1757	1845	1531	1757	1552	234	1757	973	741
Grp Volume(v), veh/h	107	0	140	19	528	15	18	0	84	22	0	222
Grp Sat Flow(s),veh/h/ln	1757	0	1834	1757	1845	1531	1757	0	1786	1757	0	1714
Q Serve(g_s), s	3.2	0.0	2.4	0.6	13.0	0.3	0.5	0.0	2.2	0.7	0.0	6.5
Cycle Q Clear(g_c), s	3.2	0.0	2.4	0.6	13.0	0.3	0.5	0.0	2.2	0.7	0.0	6.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.13	1.00		0.43
Lane Grp Cap(c), veh/h	136	0	816	32	712	591	31	0	297	37	0	290
V/C Ratio(X)	0.79	0.00	0.17	0.59	0.74	0.03	0.58	0.00	0.28	0.60	0.00	0.76
Avail Cap(c_a), veh/h	348	0	1628	796	1638	1359	249	0	1113	249	0	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	8.8	25.8	14.0	10.1	25.8	0.0	19.3	25.7	0.0	21.0
Incr Delay (d2), s/veh	3.7	0.0	0.1	6.1	2.2	0.0	6.3	0.0	0.2	5.7	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.2	0.3	7.0	0.1	0.3	0.0	1.1	0.4	0.0	3.2
LnGrp Delay(d),s/veh	27.7	0.0	9.0	31.9	16.2	10.1	32.1	0.0	19.5	31.4	0.0	22.6
LnGrp LOS	C		A	C	B	B	C		B	C		C
Approach Vol, veh/h		247			562			102			244	
Approach Delay, s/veh		17.1			16.5			21.7			23.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	28.6	5.4	13.5	8.6	25.4	5.6	13.3
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.6	4.4	2.5	8.5	5.2	15.0	2.7	4.2
Green Ext Time (p_c), s	0.0	1.2	0.0	0.8	0.0	5.4	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	115	0	7	306	20	0	0	0	26	0	108
Future Volume (veh/h)	48	115	0	7	306	20	0	0	0	26	0	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	65	155	0	9	414	13	0	0	0	35	0	24
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	777	660	17	692	581	0	205	0	420	0	166
Arrive On Green	0.06	0.42	0.00	0.01	0.38	0.38	0.00	0.00	0.00	0.11	0.00	0.11
Sat Flow, veh/h	1757	1845	1568	1757	1845	1549	0	1845	0	1662	0	1496
Grp Volume(v), veh/h	65	155	0	9	414	13	0	0	0	35	0	24
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1549	0	1845	0	1662	0	1496
Q Serve(g_s), s	1.1	1.6	0.0	0.2	5.5	0.2	0.0	0.0	0.0	0.6	0.0	0.4
Cycle Q Clear(g_c), s	1.1	1.6	0.0	0.2	5.5	0.2	0.0	0.0	0.0	0.6	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	777	660	17	692	581	0	205	0	420	0	166
V/C Ratio(X)	0.67	0.20	0.00	0.53	0.60	0.02	0.00	0.00	0.00	0.08	0.00	0.14
Avail Cap(c_a), veh/h	1150	1811	1540	1150	1811	1521	0	1208	0	1324	0	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	5.6	0.0	15.1	7.7	6.0	0.0	0.0	0.0	12.3	0.0	12.3
Incr Delay (d2), s/veh	2.9	0.2	0.0	9.3	1.2	0.0	0.0	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	0.0	0.1	3.0	0.1	0.0	0.0	0.0	0.3	0.0	0.2
LnGrp Delay(d),s/veh	17.1	5.8	0.0	24.4	8.9	6.0	0.0	0.0	0.0	12.4	0.0	12.8
LnGrp LOS	B	A		C	A	A				B		B
Approach Vol, veh/h		220			436			0			59	
Approach Delay, s/veh		9.1			9.1			0.0			12.6	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.8	17.9		7.9	6.2	16.5		7.9
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	2.2	3.6		2.6	3.1	7.5		0.0
Green Ext Time (p_c), s	0.0	1.1		0.2	0.1	3.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	77	37	40	253	24	33	73	26	13	61	45
Future Volume (veh/h)	35	77	37	40	253	24	33	73	26	13	61	45
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.96	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	51	112	21	58	367	15	48	106	26	19	88	42
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	565	469	77	507	412	68	403	99	32	299	143
Arrive On Green	0.07	0.31	0.31	0.04	0.27	0.27	0.04	0.28	0.28	0.02	0.26	0.26
Sat Flow, veh/h	1757	1845	1532	1757	1845	1497	1757	1417	348	1757	1131	540
Grp Volume(v), veh/h	51	112	21	58	367	15	48	0	132	19	0	130
Grp Sat Flow(s),veh/h/ln	1757	1845	1532	1757	1845	1497	1757	0	1764	1757	0	1671
Q Serve(g_s), s	1.4	2.3	0.5	1.7	9.3	0.4	1.4	0.0	3.0	0.6	0.0	3.2
Cycle Q Clear(g_c), s	1.4	2.3	0.5	1.7	9.3	0.4	1.4	0.0	3.0	0.6	0.0	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.32
Lane Grp Cap(c), veh/h	132	565	469	77	507	412	68	0	501	32	0	441
V/C Ratio(X)	0.39	0.20	0.04	0.76	0.72	0.04	0.71	0.00	0.26	0.59	0.00	0.29
Avail Cap(c_a), veh/h	678	1069	888	678	1069	867	678	0	818	678	0	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	13.3	12.6	24.5	17.0	13.8	24.6	0.0	14.3	25.2	0.0	15.2
Incr Delay (d2), s/veh	0.7	0.2	0.1	5.5	2.8	0.1	5.0	0.0	0.3	6.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.2	0.2	0.9	5.1	0.2	0.8	0.0	1.5	0.3	0.0	1.5
LnGrp Delay(d),s/veh	23.5	13.5	12.7	30.0	19.8	13.8	29.6	0.0	14.6	31.3	0.0	15.6
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		184			440			180			149	
Approach Delay, s/veh		16.2			20.9			18.6			17.6	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	20.9	6.0	18.2	8.4	19.2	5.0	19.2
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.7	4.3	3.4	5.2	3.4	11.3	2.6	5.0
Green Ext Time (p_c), s	0.0	0.9	0.0	0.7	0.0	2.9	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	160	159	577	457	50	230	477	226	30	1302	161
Future Volume (veh/h)	74	160	159	577	457	50	230	477	226	30	1302	161
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	79	170	136	614	486	21	245	507	49	32	1385	62
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	439	623	871	733	672	29	696	1374	614	305	2163	918
Arrive On Green	0.13	0.18	0.18	0.15	0.20	0.20	0.14	0.39	0.39	0.09	0.34	0.34
Sat Flow, veh/h	3408	3505	2720	4954	3419	147	4954	3505	1568	3408	6346	2694
Grp Volume(v), veh/h	79	170	136	614	249	258	245	507	49	32	1385	62
Grp Sat Flow(s),veh/h/ln	1704	1752	1360	1651	1752	1814	1651	1752	1568	1704	1586	1347
Q Serve(g_s), s	2.4	4.8	4.1	13.7	15.1	15.2	5.1	11.7	2.2	1.0	21.0	1.8
Cycle Q Clear(g_c), s	2.4	4.8	4.1	13.7	15.1	15.2	5.1	11.7	2.2	1.0	21.0	1.8
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	439	623	871	733	345	357	696	1374	614	305	2163	918
V/C Ratio(X)	0.18	0.27	0.16	0.84	0.72	0.72	0.35	0.37	0.08	0.10	0.64	0.07
Avail Cap(c_a), veh/h	898	1415	1486	1305	708	733	1305	1415	633	898	2562	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	40.5	27.9	47.2	42.8	42.9	44.3	24.6	21.7	47.7	31.6	25.3
Incr Delay (d2), s/veh	0.1	0.2	0.1	1.0	2.9	2.8	0.1	0.2	0.1	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.3	1.6	6.3	7.6	7.9	2.3	5.7	1.0	0.5	9.2	0.7
LnGrp Delay(d),s/veh	44.3	40.7	28.0	48.2	45.7	45.7	44.4	24.9	21.8	47.7	32.2	25.4
LnGrp LOS	D	D	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		385			1121			801			1479	
Approach Delay, s/veh		36.9			47.1			30.6			32.2	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	26.2	21.0	44.8	19.7	28.4	15.2	50.6
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	17.2	6.8	7.1	23.0	4.4	17.2	3.0	13.7
Green Ext Time (p_c), s	1.1	1.5	0.5	14.2	0.1	2.8	0.0	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	339	37	8	937	24	28	2	1	27	2	119
Future Volume (veh/h)	39	339	37	8	937	24	28	2	1	27	2	119
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	44	385	35	9	1065	15	32	2	0	31	2	18
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	2453	219	17	1732	757	51	38	0	50	3	28
Arrive On Green	0.04	0.52	0.52	0.01	0.49	0.49	0.03	0.02	0.00	0.03	0.02	0.02
Sat Flow, veh/h	1757	4697	420	1757	3505	1532	1757	1845	0	1757	159	1433
Grp Volume(v), veh/h	44	273	147	9	1065	15	32	2	0	31	0	20
Grp Sat Flow(s),veh/h/ln	1757	1679	1760	1757	1752	1532	1757	1845	0	1757	0	1592
Q Serve(g_s), s	1.1	1.9	2.0	0.2	10.0	0.2	0.8	0.0	0.0	0.8	0.0	0.6
Cycle Q Clear(g_c), s	1.1	1.9	2.0	0.2	10.0	0.2	0.8	0.0	0.0	0.8	0.0	0.6
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.00	1.00		0.90
Lane Grp Cap(c), veh/h	66	1753	919	17	1732	757	51	38	0	50	0	31
V/C Ratio(X)	0.67	0.16	0.16	0.54	0.61	0.02	0.62	0.05	0.00	0.62	0.00	0.64
Avail Cap(c_a), veh/h	935	2607	1366	935	2722	1190	780	819	0	780	0	706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	5.6	5.6	22.2	8.3	5.8	21.6	21.6	0.0	21.7	0.0	21.9
Incr Delay (d2), s/veh	4.2	0.1	0.1	9.8	0.5	0.0	4.5	0.2	0.0	4.5	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	1.0	0.2	4.9	0.1	0.5	0.0	0.0	0.4	0.0	0.3
LnGrp Delay(d),s/veh	25.7	5.7	5.7	32.0	8.8	5.8	26.1	21.9	0.0	26.2	0.0	29.7
LnGrp LOS	C	A	A	C	A	A	C	C		C		C
Approach Vol, veh/h		464			1089			34			51	
Approach Delay, s/veh		7.6			8.9			25.9			27.6	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	28.8	5.8	5.5	6.2	27.6	5.8	5.5
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.6	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	4.0	2.8	2.6	3.1	12.0	2.8	2.0
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	10.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	347	15	40	878	0	39	0	18	6	0	6
Future Volume (veh/h)	9	347	15	40	878	0	39	0	18	6	0	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	10	394	9	45	998	0	44	0	2	7	0	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	1956	594	87	2139	666	165	132	112	16	60	0
Arrive On Green	0.01	0.39	0.39	0.05	0.42	0.00	0.05	0.00	0.07	0.01	0.00	0.00
Sat Flow, veh/h	1757	5036	1528	1757	5036	1568	3408	1845	1557	1757	1845	0
Grp Volume(v), veh/h	10	394	9	45	998	0	44	0	2	7	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1528	1757	1679	1568	1704	1845	1557	1757	1845	0
Q Serve(g_s), s	0.2	2.0	0.1	1.0	5.6	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.2	2.0	0.1	1.0	5.6	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	23	1956	594	87	2139	666	165	132	112	16	60	0
V/C Ratio(X)	0.43	0.20	0.02	0.52	0.47	0.00	0.27	0.00	0.02	0.43	0.00	0.00
Avail Cap(c_a), veh/h	894	3718	1128	894	3718	1158	1996	1127	951	894	939	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.2	8.0	7.4	18.2	8.1	0.0	18.0	0.0	16.9	19.4	0.0	0.0
Incr Delay (d2), s/veh	4.7	0.1	0.0	1.8	0.2	0.0	0.3	0.0	0.0	6.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.0	0.1	0.5	2.5	0.0	0.2	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	23.9	8.0	7.4	20.0	8.3	0.0	18.3	0.0	17.0	25.7	0.0	0.0
LnGrp LOS	C	A	A	B	A		B		B	C		
Approach Vol, veh/h		413			1043			46			7	
Approach Delay, s/veh		8.4			8.8			18.3			25.7	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	20.6	6.4	5.9	5.0	22.0	4.9	7.4
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.0	4.0	2.5	0.0	2.2	7.6	2.2	2.0
Green Ext Time (p_c), s	0.0	3.4	0.0	0.0	0.0	8.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	190	102	5	520	18	24	0	6	38	2	274
Future Volume (veh/h)	73	190	102	5	520	18	24	0	6	38	2	274
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	84	218	43	6	598	6	28	0	5	44	2	87
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	470	1902	581	55	1288	390	136	0	531	96	7	293
Arrive On Green	0.14	0.38	0.38	0.02	0.26	0.26	0.04	0.00	0.17	0.05	0.19	0.19
Sat Flow, veh/h	3408	5036	1539	3408	5036	1526	3514	0	3037	1757	35	1531
Grp Volume(v), veh/h	84	218	43	6	598	6	28	0	5	44	0	89
Grp Sat Flow(s),veh/h/ln	1704	1679	1539	1704	1679	1526	1757	0	1518	1757	0	1566
Q Serve(g_s), s	1.1	1.4	0.9	0.1	5.0	0.1	0.4	0.0	0.1	1.2	0.0	2.4
Cycle Q Clear(g_c), s	1.1	1.4	0.9	0.1	5.0	0.1	0.4	0.0	0.1	1.2	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	470	1902	581	55	1288	390	136	0	531	96	0	299
V/C Ratio(X)	0.18	0.11	0.07	0.11	0.46	0.02	0.21	0.00	0.01	0.46	0.00	0.30
Avail Cap(c_a), veh/h	1365	3430	1048	1365	3430	1039	1408	0	1217	704	0	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	10.1	9.9	24.2	15.7	13.9	23.3	0.0	17.0	22.9	0.0	17.3
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.4	0.0	0.3	0.0	0.0	1.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.4	0.0	2.4	0.1	0.2	0.0	0.0	0.6	0.0	1.1
LnGrp Delay(d),s/veh	19.1	10.1	10.0	24.5	16.1	13.9	23.5	0.0	17.0	24.1	0.0	18.1
LnGrp LOS	B	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		345			610			33			133	
Approach Delay, s/veh		12.3			16.1			22.5			20.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	24.2	6.4	14.0	11.4	18.1	7.2	13.2
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.1	3.4	2.4	4.4	3.1	7.0	3.2	2.1
Green Ext Time (p_c), s	0.0	2.1	0.0	0.5	0.1	5.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	0	190	0	0	0	298	551	0	0	1202	218
Future Volume (veh/h)	114	0	190	0	0	0	298	551	0	0	1202	218
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	121	0	66	0	0	0	317	586	0	0	1279	104
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	528	0	447	3	3	0	529	2377	0	3	1543	679
Arrive On Green	0.15	0.00	0.14	0.00	0.00	0.00	0.16	0.68	0.00	0.00	0.44	0.44
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1542
Grp Volume(v), veh/h	121	0	66	0	0	0	317	586	0	0	1279	104
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1542
Q Serve(g_s), s	1.9	0.0	1.2	0.0	0.0	0.0	5.6	4.1	0.0	0.0	20.6	2.6
Cycle Q Clear(g_c), s	1.9	0.0	1.2	0.0	0.0	0.0	5.6	4.1	0.0	0.0	20.6	2.6
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	528	0	447	3	3	0	529	2377	0	3	1543	679
V/C Ratio(X)	0.23	0.00	0.15	0.00	0.00	0.00	0.60	0.25	0.00	0.00	0.83	0.15
Avail Cap(c_a), veh/h	1648	0	1471	329	345	0	1594	2377	0	329	1639	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	24.1	0.0	0.0	0.0	25.2	4.0	0.0	0.0	15.8	10.8
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.0	0.0	0.0	0.4	0.1	0.0	0.0	3.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.5	0.0	0.0	0.0	2.6	2.0	0.0	0.0	10.8	1.1
LnGrp Delay(d),s/veh	24.1	0.0	24.3	0.0	0.0	0.0	25.6	4.1	0.0	0.0	19.6	10.9
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		187			0			903			1383	
Approach Delay, s/veh		24.2			0.0			11.6			18.9	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	14.9	15.3	34.0	14.9	10.0	10.0	49.2
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	10.0	3.2	7.6	22.6	3.9	0.0	0.0	6.1
Green Ext Time (p_c), s	0.0	0.3	0.5	5.5	0.2	0.0	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	183	0	0	0	319	486	0	0	757	109
Future Volume (veh/h)	53	0	183	0	0	0	319	486	0	0	757	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	68	0	27	0	0	0	409	623	0	0	971	69
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	216	0	192	0	3	0	466	3810	0	0	1435	631
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.00	0.27	0.76	0.00	0.00	0.41	0.41
Sat Flow, veh/h	3514	0	3110	0	1845	0	1757	5202	0	0	3597	1541
Grp Volume(v), veh/h	68	0	27	0	0	0	409	623	0	0	971	69
Grp Sat Flow(s),veh/h/ln	1757	0	1555	0	1845	0	1757	1679	0	0	1752	1541
Q Serve(g_s), s	1.0	0.0	0.5	0.0	0.0	0.0	12.3	1.9	0.0	0.0	12.4	1.5
Cycle Q Clear(g_c), s	1.0	0.0	0.5	0.0	0.0	0.0	12.3	1.9	0.0	0.0	12.4	1.5
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	216	0	192	0	3	0	466	3810	0	0	1435	631
V/C Ratio(X)	0.31	0.00	0.14	0.00	0.00	0.00	0.88	0.16	0.00	0.00	0.68	0.11
Avail Cap(c_a), veh/h	1534	0	1358	0	1040	0	639	3810	0	0	1913	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	24.4	0.0	0.0	0.0	19.3	1.9	0.0	0.0	13.3	10.0
Incr Delay (d2), s/veh	1.2	0.0	0.5	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2	0.0	0.0	0.0	7.0	0.9	0.0	0.0	6.1	0.7
LnGrp Delay(d),s/veh	25.8	0.0	24.9	0.0	0.0	0.0	27.5	1.9	0.0	0.0	14.1	10.1
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		95			0			1032			1040	
Approach Delay, s/veh		25.6			0.0			12.0			13.8	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		8.4	19.1	27.5		0.0		46.6
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		3.0	14.3	14.4		0.0		3.9
Green Ext Time (p_c), s		0.4	0.3	7.7		0.0		5.7

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	158	44	163	329	44	108	429	100	57	1091	280
Future Volume (veh/h)	99	158	44	163	329	44	108	429	100	57	1091	280
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	116	186	14	192	387	48	127	505	51	67	1284	223
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	460	380	249	438	54	179	1684	734	86	1671	730
Arrive On Green	0.05	0.25	0.25	0.07	0.27	0.27	0.05	0.48	0.48	0.05	0.48	0.48
Sat Flow, veh/h	3408	1845	1525	3408	1603	199	3408	3505	1527	1757	3505	1532
Grp Volume(v), veh/h	116	186	14	192	0	435	127	505	51	67	1284	223
Grp Sat Flow(s),veh/h/ln	1704	1845	1525	1704	0	1802	1704	1752	1527	1757	1752	1532
Q Serve(g_s), s	4.4	10.9	0.9	7.2	0.0	30.1	4.8	11.4	2.3	4.9	39.3	11.6
Cycle Q Clear(g_c), s	4.4	10.9	0.9	7.2	0.0	30.1	4.8	11.4	2.3	4.9	39.3	11.6
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	460	380	249	0	492	179	1684	734	86	1671	730
V/C Ratio(X)	0.69	0.40	0.04	0.77	0.00	0.88	0.71	0.30	0.07	0.78	0.77	0.31
Avail Cap(c_a), veh/h	354	539	446	485	0	596	354	1684	734	209	1671	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.65	0.00	0.65	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	40.7	37.0	59.2	0.0	45.3	60.6	20.5	18.1	61.2	28.1	20.8
Incr Delay (d2), s/veh	3.8	1.0	0.1	2.5	0.0	10.1	3.6	0.4	0.2	10.9	3.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	0.4	3.5	0.0	16.4	2.3	5.6	1.0	2.6	19.7	5.1
LnGrp Delay(d),s/veh	64.6	41.7	37.0	61.7	0.0	55.3	64.2	20.9	18.3	72.1	31.5	21.9
LnGrp LOS	E	D	D	E		E	E	C	B	E	C	C
Approach Vol, veh/h		316			627			683			1574	
Approach Delay, s/veh		49.9			57.3			28.8			31.9	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.4	11.3	67.3	10.9	40.5	10.8	67.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	18.5	38.0	13.5	40.7	13.5	43.0	15.5	38.7
Max Q Clear Time (g_c+I1), s	9.2	12.9	6.8	41.3	6.4	32.1	6.9	13.4
Green Ext Time (p_c), s	0.3	1.7	0.1	0.0	0.1	2.9	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	118	5	16	285	79	10	135	9	52	134	241
Future Volume (veh/h)	187	118	5	16	285	79	10	135	9	52	134	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	312	197	6	27	475	57	17	225	13	87	223	107
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	353	859	26	40	562	463	28	326	19	112	438	372
Arrive On Green	0.20	0.48	0.48	0.02	0.30	0.30	0.02	0.19	0.19	0.06	0.24	0.24
Sat Flow, veh/h	1757	1779	54	1757	1845	1520	1757	1720	99	1757	1845	1568
Grp Volume(v), veh/h	312	0	203	27	475	57	17	0	238	87	223	107
Grp Sat Flow(s),veh/h/ln	1757	0	1833	1757	1845	1520	1757	0	1820	1757	1845	1568
Q Serve(g_s), s	13.2	0.0	4.9	1.2	18.5	2.1	0.7	0.0	9.4	3.7	8.1	4.3
Cycle Q Clear(g_c), s	13.2	0.0	4.9	1.2	18.5	2.1	0.7	0.0	9.4	3.7	8.1	4.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	353	0	885	40	562	463	28	0	345	112	438	372
V/C Ratio(X)	0.88	0.00	0.23	0.67	0.85	0.12	0.61	0.00	0.69	0.77	0.51	0.29
Avail Cap(c_a), veh/h	458	0	885	458	721	594	458	0	474	458	480	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	11.5	37.2	25.0	19.3	37.5	0.0	29.0	35.4	25.4	24.0
Incr Delay (d2), s/veh	12.8	0.0	0.2	7.1	8.3	0.2	7.8	0.0	3.5	4.2	1.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	2.5	0.6	10.7	0.9	0.4	0.0	5.0	1.9	4.2	1.9
LnGrp Delay(d),s/veh	42.6	0.0	11.7	44.3	33.3	19.5	45.3	0.0	32.6	39.6	26.7	24.6
LnGrp LOS	D		B	D	C	B	D		C	D	C	C
Approach Vol, veh/h		515			559			255			417	
Approach Delay, s/veh		30.4			32.4			33.4			28.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	42.1	5.7	22.7	19.9	28.4	9.4	19.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.2	6.9	2.7	10.1	15.2	20.5	5.7	11.4
Green Ext Time (p_c), s	0.0	1.5	0.0	1.6	0.2	2.8	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	119	34	7	229	100	41	56	15	85	44	110
Future Volume (veh/h)	29	119	34	7	229	100	41	56	15	85	44	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	44	180	16	11	347	41	62	85	15	129	67	103
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	62	908	401	20	824	354	78	456	80	167	218	335
Arrive On Green	0.04	0.26	0.26	0.01	0.23	0.23	0.04	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1757	3505	1547	1757	3505	1506	1757	1505	266	1757	617	948
Grp Volume(v), veh/h	44	180	16	11	347	41	62	0	100	129	0	170
Grp Sat Flow(s),veh/h/ln	1757	1752	1547	1757	1752	1506	1757	0	1770	1757	0	1565
Q Serve(g_s), s	1.4	2.2	0.4	0.3	4.7	1.2	2.0	0.0	2.3	4.0	0.0	4.4
Cycle Q Clear(g_c), s	1.4	2.2	0.4	0.3	4.7	1.2	2.0	0.0	2.3	4.0	0.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.61
Lane Grp Cap(c), veh/h	62	908	401	20	824	354	78	0	537	167	0	554
V/C Ratio(X)	0.71	0.20	0.04	0.56	0.42	0.12	0.80	0.00	0.19	0.77	0.00	0.31
Avail Cap(c_a), veh/h	629	1884	831	629	1884	809	629	0	761	629	0	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	16.1	15.5	27.5	18.1	16.8	26.4	0.0	14.4	24.7	0.0	13.1
Incr Delay (d2), s/veh	5.4	0.2	0.1	8.8	0.5	0.2	6.8	0.0	0.2	2.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.2	0.2	2.3	0.5	1.1	0.0	1.2	2.1	0.0	2.0
LnGrp Delay(d),s/veh	32.0	16.3	15.5	36.3	18.6	17.0	33.2	0.0	14.6	27.5	0.0	13.5
LnGrp LOS	C	B	B	D	B	B	C		B	C		B
Approach Vol, veh/h		240			399			162			299	
Approach Delay, s/veh		19.1			18.9			21.7			19.6	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	19.5	7.0	24.3	6.5	18.1	9.8	21.4
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.6	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	4.2	4.0	6.4	3.4	6.7	6.0	4.3
Green Ext Time (p_c), s	0.0	1.5	0.1	1.3	0.0	3.1	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	187	79	293	212	98	64	503	97	106	1044	83
Future Volume (veh/h)	37	187	79	293	212	98	64	503	97	106	1044	83
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	45	228	33	357	259	50	78	613	28	129	1273	36
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	253	498	607	439	599	505	320	1495	462	184	1522	460
Arrive On Green	0.07	0.27	0.27	0.13	0.32	0.32	0.09	0.30	0.30	0.10	0.30	0.30
Sat Flow, veh/h	3408	1845	2248	3408	1845	1555	3408	5036	1557	1757	5036	1522
Grp Volume(v), veh/h	45	228	33	357	259	50	78	613	28	129	1273	36
Grp Sat Flow(s),veh/h/ln	1704	1845	1124	1704	1845	1555	1704	1679	1557	1757	1679	1522
Q Serve(g_s), s	1.1	9.5	1.0	9.4	10.1	2.1	1.9	8.9	1.2	6.5	21.7	1.6
Cycle Q Clear(g_c), s	1.1	9.5	1.0	9.4	10.1	2.1	1.9	8.9	1.2	6.5	21.7	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	498	607	439	599	505	320	1495	462	184	1522	460
V/C Ratio(X)	0.18	0.46	0.05	0.81	0.43	0.10	0.24	0.41	0.06	0.70	0.84	0.08
Avail Cap(c_a), veh/h	742	603	734	742	603	508	742	1645	509	383	1590	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	27.9	24.8	38.9	24.4	21.6	38.6	25.8	23.1	39.7	29.9	22.9
Incr Delay (d2), s/veh	0.1	0.9	0.1	1.4	0.7	0.1	0.1	0.3	0.1	1.8	4.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.9	0.3	4.5	5.3	0.9	0.9	4.2	0.5	3.2	10.6	0.7
LnGrp Delay(d),s/veh	40.0	28.8	24.9	40.3	25.1	21.8	38.7	26.1	23.2	41.5	34.1	23.0
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		306			666			719			1438	
Approach Delay, s/veh		30.1			33.0			27.4			34.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	29.8	13.1	33.1	10.8	34.8	13.6	32.6
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	11.4	11.5	3.9	23.7	3.1	12.1	8.5	10.9
Green Ext Time (p_c), s	0.5	1.8	0.1	4.0	0.0	2.1	0.1	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	111	6	34	373	8	7	8	48	4	5	51
Future Volume (veh/h)	15	111	6	34	373	8	7	8	48	4	5	51
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	19	141	4	43	472	5	9	10	7	5	6	7
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	34	686	565	68	722	595	17	81	57	10	58	68
Arrive On Green	0.02	0.37	0.37	0.04	0.39	0.39	0.01	0.08	0.08	0.01	0.08	0.08
Sat Flow, veh/h	1757	1845	1519	1757	1845	1519	1757	999	699	1757	754	880
Grp Volume(v), veh/h	19	141	4	43	472	5	9	0	17	5	0	13
Grp Sat Flow(s),veh/h/ln	1757	1845	1519	1757	1845	1519	1757	0	1698	1757	0	1634
Q Serve(g_s), s	0.4	1.9	0.1	0.9	7.7	0.1	0.2	0.0	0.3	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.4	1.9	0.1	0.9	7.7	0.1	0.2	0.0	0.3	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.54
Lane Grp Cap(c), veh/h	34	686	565	68	722	595	17	0	138	10	0	126
V/C Ratio(X)	0.56	0.21	0.01	0.63	0.65	0.01	0.54	0.00	0.12	0.53	0.00	0.10
Avail Cap(c_a), veh/h	1146	2006	1651	1146	2006	1652	1146	0	1246	1146	0	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	7.9	7.3	17.4	9.2	6.8	18.1	0.0	15.7	18.2	0.0	15.8
Incr Delay (d2), s/veh	5.4	0.2	0.0	3.6	1.4	0.0	9.5	0.0	0.1	15.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.0	0.0	0.5	4.1	0.0	0.1	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	23.3	8.1	7.3	21.0	10.6	6.8	27.7	0.0	15.8	33.9	0.0	15.9
LnGrp LOS	C	A	A	C	B	A	C		B	C		B
Approach Vol, veh/h		164			520			26			18	
Approach Delay, s/veh		9.8			11.4			19.9			20.9	
Approach LOS		A			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	18.7	4.9	7.3	5.2	19.4	4.7	7.5
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	2.9	3.9	2.2	2.3	2.4	9.7	2.1	2.3
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	4.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	14	56	11	7	128
Future Vol, veh/h	32	14	56	11	7	128
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	42	18	74	14	9	168
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.9	7.6	8.3
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	70%	5%
Vol Thru, %	84%	0%	95%
Vol Right, %	16%	30%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	67	46	135
LT Vol	0	32	7
Through Vol	56	0	128
RT Vol	11	14	0
Lane Flow Rate	88	61	178
Geometry Grp	1	1	1
Degree of Util (X)	0.1	0.075	0.204
Departure Headway (Hd)	4.094	4.487	4.135
Convergence, Y/N	Yes	Yes	Yes
Cap	863	803	860
Service Time	2.177	2.487	2.196
HCM Lane V/C Ratio	0.102	0.076	0.207
HCM Control Delay	7.6	7.9	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.2	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	94	68	101	56	13	38	555	110	14	611	29
Future Volume (veh/h)	40	94	68	101	56	13	38	555	110	14	611	29
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	56	132	14	142	79	10	54	782	92	20	861	23
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	219	184	215	204	26	95	2229	977	56	2153	956
Arrive On Green	0.05	0.12	0.12	0.06	0.13	0.13	0.05	0.64	0.64	0.03	0.61	0.61
Sat Flow, veh/h	1757	1845	1548	3408	1605	203	1757	3505	1536	1757	3505	1556
Grp Volume(v), veh/h	56	132	14	142	0	89	54	782	92	20	861	23
Grp Sat Flow(s),veh/h/ln	1757	1845	1548	1704	0	1808	1757	1752	1536	1757	1752	1556
Q Serve(g_s), s	3.9	8.6	1.0	5.1	0.0	5.7	3.8	13.2	2.9	1.4	15.8	0.7
Cycle Q Clear(g_c), s	3.9	8.6	1.0	5.1	0.0	5.7	3.8	13.2	2.9	1.4	15.8	0.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	219	184	215	0	230	95	2229	977	56	2153	956
V/C Ratio(X)	0.58	0.60	0.08	0.66	0.00	0.39	0.57	0.35	0.09	0.36	0.40	0.02
Avail Cap(c_a), veh/h	160	562	472	527	0	551	160	2229	977	160	2153	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.00	0.99	0.80	0.80	0.80	0.94	0.94	0.94
Uniform Delay (d), s/veh	58.2	52.7	49.4	57.7	0.0	50.5	58.2	10.7	8.9	59.7	12.4	9.5
Incr Delay (d2), s/veh	4.1	2.0	0.1	2.5	0.0	0.8	3.2	0.3	0.2	2.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.5	0.4	2.5	0.0	2.9	1.9	6.4	1.3	0.7	7.8	0.3
LnGrp Delay(d),s/veh	62.3	54.7	49.5	60.3	0.0	51.2	61.4	11.1	9.0	62.4	13.0	9.6
LnGrp LOS	E	D	D	E		D	E	B	A	E	B	A
Approach Vol, veh/h		202			231			928			904	
Approach Delay, s/veh		56.4			56.8			13.8			14.0	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	19.6	11.3	82.7	11.4	20.6	8.5	85.5
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	38.4	11.5	31.7	11.5	38.4	11.5	* 38
Max Q Clear Time (g_c+I1), s	7.1	10.6	5.8	17.8	5.9	7.7	3.4	15.2
Green Ext Time (p_c), s	0.2	0.6	0.0	6.5	0.0	0.3	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	181	10	5	134	4	8	20	10	5	26	28
Future Volume (veh/h)	27	181	10	5	134	4	8	20	10	5	26	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	44	292	14	8	216	3	13	32	1	8	42	10
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	70	647	31	15	627	532	24	157	5	15	120	29
Arrive On Green	0.04	0.37	0.37	0.01	0.34	0.34	0.01	0.09	0.09	0.01	0.08	0.08
Sat Flow, veh/h	1757	1746	84	1757	1845	1566	1757	1775	55	1757	1441	343
Grp Volume(v), veh/h	44	0	306	8	216	3	13	0	33	8	0	52
Grp Sat Flow(s),veh/h/ln	1757	0	1829	1757	1845	1566	1757	0	1831	1757	0	1784
Q Serve(g_s), s	0.9	0.0	4.5	0.2	3.1	0.0	0.3	0.0	0.6	0.2	0.0	1.0
Cycle Q Clear(g_c), s	0.9	0.0	4.5	0.2	3.1	0.0	0.3	0.0	0.6	0.2	0.0	1.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.03	1.00		0.19
Lane Grp Cap(c), veh/h	70	0	678	15	627	532	24	0	161	15	0	148
V/C Ratio(X)	0.63	0.00	0.45	0.53	0.34	0.01	0.55	0.00	0.20	0.53	0.00	0.35
Avail Cap(c_a), veh/h	522	0	2434	1194	2455	2083	373	0	1711	373	0	1212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	8.4	17.4	8.7	7.7	17.3	0.0	15.0	17.4	0.0	15.3
Incr Delay (d2), s/veh	3.5	0.0	0.7	10.4	0.5	0.0	7.0	0.0	0.2	10.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.3	0.1	1.6	0.0	0.2	0.0	0.3	0.1	0.0	0.5
LnGrp Delay(d),s/veh	20.2	0.0	9.1	27.9	9.2	7.7	24.3	0.0	15.2	27.9	0.0	15.8
LnGrp LOS	C		A	C	A	A	C		B	C		B
Approach Vol, veh/h		350			227			46			60	
Approach Delay, s/veh		10.5			9.8			17.8			17.4	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	18.1	5.0	7.4	5.9	17.0	4.8	7.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.2	6.5	2.3	3.0	2.9	5.1	2.2	2.6
Green Ext Time (p_c), s	0.0	2.8	0.0	0.1	0.0	1.9	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	137	0	0	101	4	0	0	0	10	0	24
Future Volume (veh/h)	40	137	0	0	101	4	0	0	0	10	0	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	62	211	0	0	155	3	0	0	0	15	0	5
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	1113	946	7	701	592	0	78	0	340	0	66
Arrive On Green	0.06	0.60	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.04	0.00	0.04
Sat Flow, veh/h	1757	1845	1568	1757	1845	1558	0	1845	0	1674	0	1547
Grp Volume(v), veh/h	62	211	0	0	155	3	0	0	0	15	0	5
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1558	0	1845	0	1674	0	1547
Q Serve(g_s), s	0.9	1.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.2	0.0	0.1
Cycle Q Clear(g_c), s	0.9	1.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.2	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	1113	946	7	701	592	0	78	0	340	0	66
V/C Ratio(X)	0.64	0.19	0.00	0.00	0.22	0.01	0.00	0.00	0.00	0.04	0.00	0.08
Avail Cap(c_a), veh/h	1311	2065	1755	1311	2065	1743	0	1377	0	1518	0	1154
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	2.4	0.0	0.0	5.6	5.2	0.0	0.0	0.0	12.4	0.0	12.3
Incr Delay (d2), s/veh	2.6	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	15.0	2.5	0.0	0.0	5.8	5.2	0.0	0.0	0.0	12.5	0.0	13.0
LnGrp LOS	B	A			A	A				B		B
Approach Vol, veh/h		273			158			0			20	
Approach Delay, s/veh		5.3			5.8			0.0			12.6	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	21.2		5.6	6.0	15.2		5.6
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	1.0	3.4		2.2	2.9	3.5		0.0
Green Ext Time (p_c), s	0.0	1.7		0.0	0.1	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	102	20	7	78	12	11	22	9	10	14	17
Future Volume (veh/h)	22	102	20	7	78	12	11	22	9	10	14	17
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	33	155	16	11	118	9	17	33	0	15	21	2
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	169	653	555	20	497	419	30	246	0	27	218	21
Arrive On Green	0.10	0.35	0.35	0.01	0.27	0.27	0.02	0.13	0.00	0.02	0.13	0.13
Sat Flow, veh/h	1757	1845	1568	1757	1845	1553	1757	1845	0	1757	1655	158
Grp Volume(v), veh/h	33	155	16	11	118	9	17	33	0	15	0	23
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1553	1757	1845	0	1757	0	1813
Q Serve(g_s), s	0.6	2.2	0.2	0.2	1.9	0.2	0.4	0.6	0.0	0.3	0.0	0.4
Cycle Q Clear(g_c), s	0.6	2.2	0.2	0.2	1.9	0.2	0.4	0.6	0.0	0.3	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.09
Lane Grp Cap(c), veh/h	169	653	555	20	497	419	30	246	0	27	0	238
V/C Ratio(X)	0.20	0.24	0.03	0.54	0.24	0.02	0.56	0.13	0.00	0.55	0.00	0.10
Avail Cap(c_a), veh/h	948	1492	1269	948	1492	1257	948	1194	0	948	0	1173
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	8.4	7.8	18.2	10.6	9.9	18.1	14.2	0.0	18.1	0.0	14.2
Incr Delay (d2), s/veh	0.2	0.3	0.0	8.1	0.3	0.0	5.8	0.2	0.0	6.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.1	0.2	1.0	0.1	0.2	0.3	0.0	0.2	0.0	0.2
LnGrp Delay(d),s/veh	15.6	8.7	7.8	26.3	10.9	10.0	23.9	14.4	0.0	24.5	0.0	14.3
LnGrp LOS	B	A	A	C	B	A	C	B		C		B
Approach Vol, veh/h		204			138			50			38	
Approach Delay, s/veh		9.8			12.1			17.6			18.4	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	18.1	4.6	9.4	8.1	15.0	4.6	9.4
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.2	4.2	2.4	2.4	2.6	3.9	2.3	2.6
Green Ext Time (p_c), s	0.0	1.2	0.0	0.1	0.0	0.9	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	488	345	247	203	31	209	448	234	52	610	99
Future Volume (veh/h)	192	488	345	247	203	31	209	448	234	52	610	99
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	267	678	443	343	282	12	290	622	89	72	847	37
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	512	903	1126	744	882	37	744	887	392	451	1492	647
Arrive On Green	0.15	0.26	0.26	0.15	0.26	0.26	0.15	0.25	0.25	0.13	0.24	0.24
Sat Flow, veh/h	3408	3505	2760	4954	3423	145	4954	3505	1548	3408	6346	2749
Grp Volume(v), veh/h	267	678	443	343	144	150	290	622	89	72	847	37
Grp Sat Flow(s),veh/h/ln	1704	1752	1380	1651	1752	1815	1651	1752	1548	1704	1586	1375
Q Serve(g_s), s	7.7	19.0	12.1	6.7	7.1	7.1	5.6	17.2	4.9	2.0	12.5	1.1
Cycle Q Clear(g_c), s	7.7	19.0	12.1	6.7	7.1	7.1	5.6	17.2	4.9	2.0	12.5	1.1
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	512	903	1126	744	452	468	744	887	392	451	1492	647
V/C Ratio(X)	0.52	0.75	0.39	0.46	0.32	0.32	0.39	0.70	0.23	0.16	0.57	0.06
Avail Cap(c_a), veh/h	960	1514	1607	1396	757	784	1396	1514	669	960	2741	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	36.4	22.2	41.3	32.0	32.0	40.8	36.1	31.5	40.9	35.9	31.6
Incr Delay (d2), s/veh	0.3	1.3	0.2	0.2	0.4	0.4	0.1	1.5	0.4	0.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	9.3	4.6	3.1	3.5	3.6	2.6	8.5	2.1	0.9	5.5	0.4
LnGrp Delay(d),s/veh	42.0	37.6	22.5	41.5	32.4	32.4	41.0	37.6	31.9	41.0	36.4	31.6
LnGrp LOS	D	D	C	D	C	C	D	D	C	D	D	C
Approach Vol, veh/h		1388			637			1001			956	
Approach Delay, s/veh		33.6			37.3			38.1			36.6	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	33.4	21.0	31.0	21.0	33.4	19.1	32.9
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	9.7	21.0	7.6	14.5	9.7	9.1	4.0	19.2
Green Ext Time (p_c), s	0.6	6.5	0.6	9.5	0.4	1.6	0.1	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	674	46	7	398	15	53	5	1	14	3	28
Future Volume (veh/h)	54	674	46	7	398	15	53	5	1	14	3	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	76	949	61	10	561	10	75	7	0	20	4	2
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	2123	136	19	1373	600	100	80	0	35	7	4
Arrive On Green	0.06	0.44	0.44	0.01	0.39	0.39	0.06	0.04	0.00	0.02	0.01	0.01
Sat Flow, veh/h	1757	4837	310	1757	3505	1531	1757	1845	0	1757	1161	581
Grp Volume(v), veh/h	76	658	352	10	561	10	75	7	0	20	0	6
Grp Sat Flow(s),veh/h/ln	1757	1679	1790	1757	1752	1531	1757	1845	0	1757	0	1742
Q Serve(g_s), s	1.7	5.3	5.3	0.2	4.5	0.2	1.6	0.1	0.0	0.4	0.0	0.1
Cycle Q Clear(g_c), s	1.7	5.3	5.3	0.2	4.5	0.2	1.6	0.1	0.0	0.4	0.0	0.1
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.00	1.00		0.33
Lane Grp Cap(c), veh/h	101	1474	786	19	1373	600	100	80	0	35	0	11
V/C Ratio(X)	0.75	0.45	0.45	0.54	0.41	0.02	0.75	0.09	0.00	0.57	0.00	0.53
Avail Cap(c_a), veh/h	1086	3027	1614	1086	3160	1381	905	950	0	905	0	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	7.6	7.6	19.1	8.5	7.2	18.0	17.8	0.0	18.9	0.0	19.2
Incr Delay (d2), s/veh	4.1	0.3	0.6	8.8	0.3	0.0	4.1	0.2	0.0	5.3	0.0	13.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.7	0.1	2.2	0.1	0.9	0.1	0.0	0.3	0.0	0.1
LnGrp Delay(d),s/veh	22.2	7.9	8.2	27.9	8.8	7.2	22.1	18.0	0.0	24.2	0.0	33.0
LnGrp LOS	C	A	A	C	A	A	C	B		C		C
Approach Vol, veh/h		1086			581			82			26	
Approach Delay, s/veh		9.0			9.1			21.8			26.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	22.3	6.7	4.9	6.7	20.5	5.3	6.3
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	7.3	3.6	2.1	3.7	6.5	2.4	2.1
Green Ext Time (p_c), s	0.0	9.7	0.1	0.0	0.1	5.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	627	35	28	348	0	44	0	42	1	0	1
Future Volume (veh/h)	16	627	35	28	348	0	44	0	42	1	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	23	896	49	40	497	0	63	0	7	1	0	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	49	2138	662	77	2219	691	208	180	151	4	69	0
Arrive On Green	0.03	0.42	0.42	0.04	0.44	0.00	0.06	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1559	1757	5036	1568	3408	1845	1547	1757	1845	0
Grp Volume(v), veh/h	23	896	49	40	497	0	63	0	7	1	0	0
Grp Sat Flow(s),veh/h/ln	1757	1679	1559	1757	1679	1568	1704	1845	1547	1757	1845	0
Q Serve(g_s), s	0.6	5.4	0.8	1.0	2.7	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	5.4	0.8	1.0	2.7	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	49	2138	662	77	2219	691	208	180	151	4	69	0
V/C Ratio(X)	0.47	0.42	0.07	0.52	0.22	0.00	0.30	0.00	0.05	0.25	0.00	0.00
Avail Cap(c_a), veh/h	804	3343	1035	804	3343	1041	1795	1013	850	804	845	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	8.8	7.5	20.4	7.6	0.0	19.6	0.0	17.9	21.8	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.2	0.1	2.0	0.1	0.0	0.3	0.0	0.0	11.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.5	0.4	0.5	1.3	0.0	0.4	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	23.5	9.0	7.5	22.4	7.7	0.0	19.9	0.0	17.9	33.3	0.0	0.0
LnGrp LOS	C	A	A	C	A		B		B	C		
Approach Vol, veh/h		968			537			70			1	
Approach Delay, s/veh		9.3			8.8			19.7			33.3	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	23.8	7.2	6.2	5.7	24.6	4.6	8.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.0	7.4	2.8	0.0	2.6	4.7	2.0	2.2
Green Ext Time (p_c), s	0.0	8.3	0.1	0.0	0.0	4.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	483	40	2	215	19	66	0	5	25	1	75
Future Volume (veh/h)	108	483	40	2	215	19	66	0	5	25	1	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	157	700	25	3	312	9	96	0	6	36	1	23
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	613	1940	604	28	1075	324	314	0	546	83	9	202
Arrive On Green	0.18	0.39	0.39	0.01	0.21	0.21	0.09	0.00	0.18	0.05	0.13	0.13
Sat Flow, veh/h	3408	5036	1567	3408	5036	1520	3514	0	3113	1757	66	1508
Grp Volume(v), veh/h	157	700	25	3	312	9	96	0	6	36	0	24
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1520	1757	0	1556	1757	0	1573
Q Serve(g_s), s	1.9	4.9	0.5	0.0	2.5	0.2	1.3	0.0	0.1	1.0	0.0	0.7
Cycle Q Clear(g_c), s	1.9	4.9	0.5	0.0	2.5	0.2	1.3	0.0	0.1	1.0	0.0	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	613	1940	604	28	1075	324	314	0	546	83	0	210
V/C Ratio(X)	0.26	0.36	0.04	0.11	0.29	0.03	0.31	0.00	0.01	0.43	0.00	0.11
Avail Cap(c_a), veh/h	1391	3493	1087	1391	3493	1054	1434	0	1270	717	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	10.8	9.4	24.1	16.2	15.2	20.9	0.0	16.7	22.7	0.0	18.7
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.6	0.2	0.0	0.2	0.0	0.0	1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.2	0.2	0.0	1.2	0.1	0.6	0.0	0.0	0.5	0.0	0.3
LnGrp Delay(d),s/veh	17.4	10.9	9.4	24.8	16.4	15.3	21.1	0.0	16.7	24.0	0.0	19.0
LnGrp LOS	B	B	A	C	B	B	C		B	C		B
Approach Vol, veh/h		882			324			102			60	
Approach Delay, s/veh		12.0			16.4			20.8			22.0	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	24.2	8.9	11.1	13.3	15.8	6.8	13.1
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	6.9	3.3	2.7	3.9	4.5	3.0	2.1
Green Ext Time (p_c), s	0.0	6.8	0.1	0.1	0.2	2.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	0	353	0	0	0	105	487	0	0	564	96
Future Volume (veh/h)	175	0	353	0	0	0	105	487	0	0	564	96
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	250	0	174	0	0	0	150	696	0	0	806	48
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	611	0	615	3	3	0	539	2116	0	3	1237	550
Arrive On Green	0.17	0.00	0.20	0.00	0.00	0.00	0.16	0.60	0.00	0.00	0.35	0.35
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1559
Grp Volume(v), veh/h	250	0	174	0	0	0	150	696	0	0	806	48
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1559
Q Serve(g_s), s	3.6	0.0	2.7	0.0	0.0	0.0	2.2	5.6	0.0	0.0	11.1	1.2
Cycle Q Clear(g_c), s	3.6	0.0	2.7	0.0	0.0	0.0	2.2	5.6	0.0	0.0	11.1	1.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	611	0	615	3	3	0	539	2116	0	3	1237	550
V/C Ratio(X)	0.41	0.00	0.28	0.00	0.00	0.00	0.28	0.33	0.00	0.00	0.65	0.09
Avail Cap(c_a), veh/h	1842	0	1644	367	386	0	1781	2116	0	367	1832	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	19.6	0.0	0.0	0.0	21.3	5.6	0.0	0.0	15.6	12.4
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.2	0.0	0.0	0.0	1.0	2.7	0.0	0.0	5.5	0.5
LnGrp Delay(d),s/veh	21.2	0.0	20.0	0.0	0.0	0.0	21.4	5.8	0.0	0.0	16.4	12.5
LnGrp LOS	C		B				C	A			B	B
Approach Vol, veh/h		424			0			846			854	
Approach Delay, s/veh		20.7			0.0			8.5			16.2	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	17.1	14.4	26.0	15.3	1.8	0.0	40.4
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	10.0	4.7	4.2	13.1	5.6	0.0	0.0	7.6
Green Ext Time (p_c), s	0.0	0.9	0.2	6.6	0.4	0.0	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	152	0	0	0	97	270	0	0	297	32
Future Volume (veh/h)	41	0	152	0	0	0	97	270	0	0	297	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	68	0	45	0	0	0	162	450	0	0	495	16
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	427	0	381	0	6	0	211	2892	0	0	1113	490
Arrive On Green	0.12	0.00	0.12	0.00	0.00	0.00	0.12	0.57	0.00	0.00	0.32	0.32
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1542
Grp Volume(v), veh/h	68	0	45	0	0	0	162	450	0	0	495	16
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1542
Q Serve(g_s), s	0.6	0.0	0.4	0.0	0.0	0.0	2.9	1.4	0.0	0.0	3.7	0.2
Cycle Q Clear(g_c), s	0.6	0.0	0.4	0.0	0.0	0.0	2.9	1.4	0.0	0.0	3.7	0.2
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	427	0	381	0	6	0	211	2892	0	0	1113	490
V/C Ratio(X)	0.16	0.00	0.12	0.00	0.00	0.00	0.77	0.16	0.00	0.00	0.44	0.03
Avail Cap(c_a), veh/h	2565	0	2289	0	1739	0	1069	4595	0	0	3198	1407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	12.9	0.0	0.0	0.0	14.0	3.3	0.0	0.0	8.9	7.7
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.2	0.0	0.0	0.0	1.5	0.6	0.0	0.0	1.8	0.1
LnGrp Delay(d),s/veh	13.2	0.0	13.1	0.0	0.0	0.0	16.3	3.3	0.0	0.0	9.3	7.8
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		113			0			612			511	
Approach Delay, s/veh		13.1			0.0			6.7			9.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.0	8.4	15.4		0.0		23.9
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		2.6	4.9	5.7		0.0		3.4
Green Ext Time (p_c), s		0.5	0.2	4.4		0.0		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	135	94	83	75	29	45	478	84	20	476	78
Future Volume (veh/h)	186	135	94	83	75	29	45	478	84	20	476	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	262	190	25	117	106	27	63	673	63	28	670	58
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	322	265	221	172	141	36	125	2173	971	44	2133	952
Arrive On Green	0.09	0.14	0.14	0.05	0.10	0.10	0.04	0.62	0.62	0.03	0.61	0.61
Sat Flow, veh/h	3408	1845	1540	3408	1418	361	3408	3505	1567	1757	3505	1564
Grp Volume(v), veh/h	262	190	25	117	0	133	63	673	63	28	670	58
Grp Sat Flow(s),veh/h/ln	1704	1845	1540	1704	0	1780	1704	1752	1567	1757	1752	1564
Q Serve(g_s), s	9.0	11.8	1.7	4.1	0.0	8.7	2.2	10.8	1.9	1.9	11.1	1.8
Cycle Q Clear(g_c), s	9.0	11.8	1.7	4.1	0.0	8.7	2.2	10.8	1.9	1.9	11.1	1.8
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	265	221	172	0	177	125	2173	971	44	2133	952
V/C Ratio(X)	0.81	0.72	0.11	0.68	0.00	0.75	0.51	0.31	0.06	0.63	0.31	0.06
Avail Cap(c_a), veh/h	440	538	449	383	0	489	327	2173	971	168	2133	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.00	0.98	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	49.1	44.7	56.0	0.0	52.6	56.7	10.7	9.0	57.9	11.4	9.5
Incr Delay (d2), s/veh	7.2	6.1	0.4	3.4	0.0	10.1	2.2	0.3	0.1	10.4	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.5	0.7	2.0	0.0	4.8	1.1	5.3	0.8	1.0	5.4	0.8
LnGrp Delay(d),s/veh	60.6	55.2	45.1	59.4	0.0	62.7	58.9	11.1	9.2	68.4	11.8	9.7
LnGrp LOS	E	E	D	E		E	E	B	A	E	B	A
Approach Vol, veh/h		477			250			799			756	
Approach Delay, s/veh		57.6			61.2			14.7			13.7	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	22.2	8.9	78.3	15.8	17.0	7.5	79.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.5	35.0	11.5	40.7	15.5	33.0	11.5	40.7
Max Q Clear Time (g_c+I1), s	6.1	13.8	4.2	13.1	11.0	10.7	3.9	12.8
Green Ext Time (p_c), s	0.1	1.7	0.0	6.7	0.3	1.0	0.0	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	173	7	3	100	9	6	23	5	16	31	81
Future Volume (veh/h)	59	173	7	3	100	9	6	23	5	16	31	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	104	304	10	5	175	5	11	40	0	28	54	26
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	618	20	10	513	434	20	212	0	48	241	205
Arrive On Green	0.08	0.35	0.35	0.01	0.28	0.28	0.01	0.12	0.00	0.03	0.13	0.13
Sat Flow, veh/h	1757	1775	58	1757	1845	1560	1757	1845	0	1757	1845	1568
Grp Volume(v), veh/h	104	0	314	5	175	5	11	40	0	28	54	26
Grp Sat Flow(s),veh/h/ln	1757	0	1833	1757	1845	1560	1757	1845	0	1757	1845	1568
Q Serve(g_s), s	2.1	0.0	4.9	0.1	2.8	0.1	0.2	0.7	0.0	0.6	1.0	0.5
Cycle Q Clear(g_c), s	2.1	0.0	4.9	0.1	2.8	0.1	0.2	0.7	0.0	0.6	1.0	0.5
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	0	638	10	513	434	20	212	0	48	241	205
V/C Ratio(X)	0.79	0.00	0.49	0.53	0.34	0.01	0.54	0.19	0.00	0.59	0.22	0.13
Avail Cap(c_a), veh/h	957	0	1498	957	1508	1275	957	1005	0	957	1005	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	9.4	18.2	10.6	9.6	18.0	14.7	0.0	17.7	14.3	14.1
Incr Delay (d2), s/veh	3.8	0.0	0.8	15.7	0.6	0.0	8.1	0.6	0.0	4.3	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.6	0.1	1.5	0.0	0.2	0.4	0.0	0.3	0.5	0.3
LnGrp Delay(d),s/veh	20.5	0.0	10.2	33.9	11.1	9.6	26.1	15.3	0.0	21.9	14.9	14.5
LnGrp LOS	C		B	C	B	A	C	B		C	B	B
Approach Vol, veh/h		418			185			51			108	
Approach Delay, s/veh		12.8			11.7			17.6			16.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	17.8	4.9	9.3	7.3	15.2	5.5	8.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.1	6.9	2.2	3.0	4.1	4.8	2.6	2.7
Green Ext Time (p_c), s	0.0	2.5	0.0	0.4	0.1	1.3	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	133	23	4	60	35	14	12	3	42	15	38
Future Volume (veh/h)	39	133	23	4	60	35	14	12	3	42	15	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		0.86
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	72	246	17	7	111	21	26	22	2	66	45	26
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	91	1043	464	13	889	396	43	442	40	85	300	173
Arrive On Green	0.05	0.30	0.30	0.01	0.25	0.25	0.02	0.27	0.27	0.05	0.29	0.29
Sat Flow, veh/h	1757	3505	1560	1757	3505	1562	1757	1660	151	1757	1032	596
Grp Volume(v), veh/h	72	246	17	7	111	21	26	0	24	66	0	71
Grp Sat Flow(s),veh/h/ln	1757	1752	1560	1757	1752	1562	1757	0	1811	1757	0	1629
Q Serve(g_s), s	2.0	2.6	0.4	0.2	1.2	0.5	0.7	0.0	0.5	1.8	0.0	1.6
Cycle Q Clear(g_c), s	2.0	2.6	0.4	0.2	1.2	0.5	0.7	0.0	0.5	1.8	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.37
Lane Grp Cap(c), veh/h	91	1043	464	13	889	396	43	0	482	85	0	473
V/C Ratio(X)	0.80	0.24	0.04	0.54	0.12	0.05	0.61	0.00	0.05	0.77	0.00	0.15
Avail Cap(c_a), veh/h	722	2160	962	722	2160	963	722	0	893	722	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	12.9	12.1	24.1	14.0	13.7	23.5	0.0	13.3	22.9	0.0	12.8
Incr Delay (d2), s/veh	5.8	0.2	0.0	12.1	0.1	0.1	5.1	0.0	0.1	5.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.2	0.1	0.6	0.2	0.4	0.0	0.2	1.0	0.0	0.7
LnGrp Delay(d),s/veh	28.6	13.1	12.2	36.2	14.1	13.8	28.6	0.0	13.3	28.4	0.0	13.0
LnGrp LOS	C	B	B	D	B	B	C		B	C		B
Approach Vol, veh/h		335			139			50			137	
Approach Delay, s/veh		16.4			15.2			21.3			20.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	19.5	5.7	18.6	7.0	17.3	6.9	17.5
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.2	4.6	2.7	3.6	4.0	3.2	3.8	2.5
Green Ext Time (p_c), s	0.0	2.1	0.0	0.4	0.1	0.9	0.1	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	32	54	95	32	17	52	514	95	19	508	44
Future Volume (veh/h)	41	32	54	95	32	17	52	514	95	19	508	44
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	60	47	13	140	47	4	76	756	64	28	747	25
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	360	257	372	515	341	284	409	1715	531	109	1381	427
Arrive On Green	0.11	0.14	0.14	0.15	0.18	0.18	0.12	0.34	0.34	0.06	0.27	0.27
Sat Flow, veh/h	3408	1845	2673	3408	1845	1536	3408	5036	1561	1757	5036	1557
Grp Volume(v), veh/h	60	47	13	140	47	4	76	756	64	28	747	25
Grp Sat Flow(s),veh/h/ln	1704	1845	1336	1704	1845	1536	1704	1679	1561	1757	1679	1557
Q Serve(g_s), s	1.0	1.3	0.3	2.2	1.3	0.1	1.2	6.9	1.7	0.9	7.5	0.7
Cycle Q Clear(g_c), s	1.0	1.3	0.3	2.2	1.3	0.1	1.2	6.9	1.7	0.9	7.5	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	257	372	515	341	284	409	1715	531	109	1381	427
V/C Ratio(X)	0.17	0.18	0.03	0.27	0.14	0.01	0.19	0.44	0.12	0.26	0.54	0.06
Avail Cap(c_a), veh/h	1143	928	1344	1143	928	773	1143	2533	785	589	2449	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	22.7	22.2	22.4	20.3	19.9	23.6	15.3	13.5	26.6	18.4	16.0
Incr Delay (d2), s/veh	0.1	0.5	0.1	0.1	0.3	0.0	0.1	0.3	0.1	0.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.1	1.0	0.7	0.1	0.6	3.3	0.7	0.4	3.5	0.3
LnGrp Delay(d),s/veh	24.4	23.2	22.3	22.5	20.6	19.9	23.7	15.5	13.7	27.1	18.9	16.0
LnGrp LOS	C	C	C	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		120			191			896			800	
Approach Delay, s/veh		23.7			22.0			16.1			19.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	13.3	11.7	21.7	10.3	16.0	7.7	25.6
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	4.2	3.3	3.2	9.5	3.0	3.3	2.9	8.9
Green Ext Time (p_c), s	0.2	0.3	0.1	6.4	0.1	0.3	0.0	6.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	168	7	6	115	6	5	2	7	2	1	16
Future Volume (veh/h)	22	168	7	6	115	6	5	2	7	2	1	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	33	255	6	9	174	4	8	3	0	3	2	1
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	56	651	536	17	610	515	15	77	0	6	42	21
Arrive On Green	0.03	0.35	0.35	0.01	0.33	0.33	0.01	0.04	0.00	0.00	0.04	0.04
Sat Flow, veh/h	1757	1845	1518	1757	1845	1556	1757	1845	0	1757	1156	578
Grp Volume(v), veh/h	33	255	6	9	174	4	8	3	0	3	0	3
Grp Sat Flow(s),veh/h/ln	1757	1845	1518	1757	1845	1556	1757	1845	0	1757	0	1735
Q Serve(g_s), s	0.6	3.2	0.1	0.2	2.2	0.1	0.1	0.0	0.0	0.1	0.0	0.1
Cycle Q Clear(g_c), s	0.6	3.2	0.1	0.2	2.2	0.1	0.1	0.0	0.0	0.1	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.33
Lane Grp Cap(c), veh/h	56	651	536	17	610	515	15	77	0	6	0	64
V/C Ratio(X)	0.59	0.39	0.01	0.53	0.29	0.01	0.53	0.04	0.00	0.52	0.00	0.05
Avail Cap(c_a), veh/h	1349	2361	1943	1349	2361	1992	1349	1594	0	1349	0	1554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	7.6	6.6	15.4	7.7	7.0	15.4	14.4	0.0	15.5	0.0	14.5
Incr Delay (d2), s/veh	3.6	0.5	0.0	9.3	0.4	0.0	10.3	0.1	0.0	24.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	0.0	0.1	1.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	18.5	8.1	6.6	24.7	8.1	7.0	25.7	14.4	0.0	39.8	0.0	14.6
LnGrp LOS	B	A	A	C	A	A	C	B		D		B
Approach Vol, veh/h		294			187			11			6	
Approach Delay, s/veh		9.3			8.9			22.7			27.2	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	16.0	4.8	5.6	5.5	15.3	4.6	5.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	2.2	5.2	2.1	2.1	2.6	4.2	2.1	2.0
Green Ext Time (p_c), s	0.0	2.2	0.0	0.0	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	4	43	26	5	46
Future Vol, veh/h	14	4	43	26	5	46
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	22	6	66	40	8	71
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.5	7.4	7.5
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	78%	10%
Vol Thru, %	62%	0%	90%
Vol Right, %	38%	22%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	69	18	51
LT Vol	0	14	5
Through Vol	43	0	46
RT Vol	26	4	0
Lane Flow Rate	106	28	78
Geometry Grp	1	1	1
Degree of Util (X)	0.113	0.033	0.089
Departure Headway (Hd)	3.833	4.289	4.099
Convergence, Y/N	Yes	Yes	Yes
Cap	933	826	872
Service Time	1.865	2.361	2.131
HCM Lane V/C Ratio	0.114	0.034	0.089
HCM Control Delay	7.4	7.5	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	108	67	266	207	79	29	524	84	125	1193	140
Future Volume (veh/h)	98	108	67	266	207	79	29	524	84	125	1193	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	114	126	18	309	241	82	34	609	43	145	1387	103
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	337	280	338	267	91	75	1691	741	170	1880	816
Arrive On Green	0.08	0.18	0.18	0.10	0.20	0.20	0.04	0.48	0.48	0.10	0.54	0.54
Sat Flow, veh/h	1757	1845	1535	3408	1312	446	1757	3505	1535	1757	3505	1521
Grp Volume(v), veh/h	114	126	18	309	0	323	34	609	43	145	1387	103
Grp Sat Flow(s),veh/h/ln	1757	1845	1535	1704	0	1758	1757	1752	1535	1757	1752	1521
Q Serve(g_s), s	8.7	8.1	1.3	12.2	0.0	24.4	2.6	14.8	2.0	11.1	41.3	4.6
Cycle Q Clear(g_c), s	8.7	8.1	1.3	12.2	0.0	24.4	2.6	14.8	2.0	11.1	41.3	4.6
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	337	280	338	0	358	75	1691	741	170	1880	816
V/C Ratio(X)	0.83	0.37	0.06	0.91	0.00	0.90	0.45	0.36	0.06	0.85	0.74	0.13
Avail Cap(c_a), veh/h	252	521	433	338	0	496	252	1691	741	252	1880	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.00	0.52	0.93	0.93	0.93	0.26	0.26	0.26
Uniform Delay (d), s/veh	61.8	48.8	46.0	60.7	0.0	52.8	63.6	22.0	18.7	60.5	24.2	15.7
Incr Delay (d2), s/veh	9.0	0.5	0.1	17.3	0.0	8.4	3.0	0.6	0.1	4.4	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.2	0.6	6.6	0.0	12.7	1.3	7.2	0.9	5.6	20.0	1.9
LnGrp Delay(d),s/veh	70.7	49.3	46.0	78.0	0.0	61.3	66.5	22.6	18.9	64.9	24.9	15.8
LnGrp LOS	E	D	D	E		E	E	C	B	E	C	B
Approach Vol, veh/h		258			632			686			1635	
Approach Delay, s/veh		58.5			69.5			24.5			27.8	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	29.4	10.3	78.3	15.2	32.3	17.6	70.9
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	13.5	38.4	19.5	39.7	19.5	38.4	19.5	* 38
Max Q Clear Time (g_c+I1), s	14.2	10.1	4.6	43.3	10.7	26.4	13.1	16.8
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.1	1.2	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	234	4	23	447	47	13	54	25	60	93	92
Future Volume (veh/h)	79	234	4	23	447	47	13	54	25	60	93	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	107	316	4	31	604	28	18	73	20	81	126	96
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	136	853	11	47	772	641	30	196	54	103	180	137
Arrive On Green	0.08	0.47	0.47	0.03	0.42	0.42	0.02	0.14	0.14	0.06	0.18	0.18
Sat Flow, veh/h	1757	1817	23	1757	1845	1532	1757	1370	375	1757	973	741
Grp Volume(v), veh/h	107	0	320	31	604	28	18	0	93	81	0	222
Grp Sat Flow(s),veh/h/ln	1757	0	1840	1757	1845	1532	1757	0	1745	1757	0	1714
Q Serve(g_s), s	3.7	0.0	6.8	1.1	17.3	0.7	0.6	0.0	3.0	2.8	0.0	7.4
Cycle Q Clear(g_c), s	3.7	0.0	6.8	1.1	17.3	0.7	0.6	0.0	3.0	2.8	0.0	7.4
Prop In Lane	1.00		0.01	1.00		1.00	1.00		0.22	1.00		0.43
Lane Grp Cap(c), veh/h	136	0	864	47	772	641	30	0	250	103	0	317
V/C Ratio(X)	0.78	0.00	0.37	0.66	0.78	0.04	0.59	0.00	0.37	0.79	0.00	0.70
Avail Cap(c_a), veh/h	301	0	1411	688	1415	1175	215	0	940	215	0	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	10.4	29.5	15.4	10.6	29.9	0.0	23.7	28.5	0.0	23.4
Incr Delay (d2), s/veh	3.7	0.0	0.4	5.7	2.5	0.0	6.7	0.0	0.3	5.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	3.6	0.6	9.3	0.3	0.4	0.0	1.4	1.5	0.0	3.6
LnGrp Delay(d),s/veh	31.5	0.0	10.8	35.3	17.9	10.6	36.6	0.0	24.1	33.4	0.0	24.5
LnGrp LOS	C		B	D	B	B	D		C	C		C
Approach Vol, veh/h		427			663			111			303	
Approach Delay, s/veh		16.0			18.4			26.1			26.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	33.8	5.6	15.8	9.3	30.6	8.1	13.3
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	3.1	8.8	2.6	9.4	5.7	19.3	4.8	5.0
Green Ext Time (p_c), s	0.0	2.9	0.0	0.8	0.0	6.3	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	188	87	294	319	20	79	32	82	26	131	108
Future Volume (veh/h)	80	188	87	294	319	20	79	32	82	26	131	108
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.96	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	254	30	397	431	11	107	43	80	35	177	112
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	140	376	312	452	703	591	287	166	308	417	309	196
Arrive On Green	0.08	0.20	0.20	0.26	0.38	0.38	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1757	1845	1531	1757	1845	1549	1064	562	1045	1231	1048	663
Grp Volume(v), veh/h	108	254	30	397	431	11	107	0	123	35	0	289
Grp Sat Flow(s),veh/h/ln	1757	1845	1531	1757	1845	1549	1064	0	1607	1231	0	1711
Q Serve(g_s), s	3.5	7.3	0.9	12.4	10.8	0.3	5.4	0.0	3.3	1.3	0.0	8.2
Cycle Q Clear(g_c), s	3.5	7.3	0.9	12.4	10.8	0.3	13.7	0.0	3.3	4.6	0.0	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		0.39
Lane Grp Cap(c), veh/h	140	376	312	452	703	591	287	0	474	417	0	505
V/C Ratio(X)	0.77	0.68	0.10	0.88	0.61	0.02	0.37	0.00	0.26	0.08	0.00	0.57
Avail Cap(c_a), veh/h	613	965	801	613	965	811	344	0	561	483	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	21.1	18.5	20.4	14.3	11.0	22.9	0.0	15.4	17.2	0.0	17.1
Incr Delay (d2), s/veh	3.4	3.0	0.2	8.7	1.2	0.0	1.1	0.0	0.4	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.0	0.4	7.1	5.7	0.1	1.7	0.0	1.5	0.5	0.0	4.1
LnGrp Delay(d),s/veh	29.3	24.1	18.7	29.1	15.6	11.1	24.1	0.0	15.8	17.3	0.0	18.6
LnGrp LOS	C	C	B	C	B	B	C		B	B		B
Approach Vol, veh/h		392			839			230			324	
Approach Delay, s/veh		25.1			21.9			19.7			18.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	16.7		21.4	9.1	26.9		21.4
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	14.4	9.3		10.2	5.5	12.8		15.7
Green Ext Time (p_c), s	0.3	2.1		1.8	0.1	3.4		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	193	50	40	475	24	59	90	26	13	96	97
Future Volume (veh/h)	61	193	50	40	475	24	59	90	26	13	96	97
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.96	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	88	280	27	58	688	12	86	130	29	19	139	112
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	132	769	639	74	708	578	111	425	95	30	220	178
Arrive On Green	0.08	0.42	0.42	0.04	0.38	0.38	0.06	0.29	0.29	0.02	0.25	0.25
Sat Flow, veh/h	1757	1845	1533	1757	1845	1508	1757	1448	323	1757	890	717
Grp Volume(v), veh/h	88	280	27	58	688	12	86	0	159	19	0	251
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1757	1845	1508	1757	0	1770	1757	0	1606
Q Serve(g_s), s	3.8	8.2	0.8	2.6	28.7	0.4	3.8	0.0	5.5	0.8	0.0	10.9
Cycle Q Clear(g_c), s	3.8	8.2	0.8	2.6	28.7	0.4	3.8	0.0	5.5	0.8	0.0	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.45
Lane Grp Cap(c), veh/h	132	769	639	74	708	578	111	0	520	30	0	398
V/C Ratio(X)	0.67	0.36	0.04	0.78	0.97	0.02	0.77	0.00	0.31	0.63	0.00	0.63
Avail Cap(c_a), veh/h	449	769	639	449	708	578	449	0	543	449	0	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	15.7	13.5	37.1	23.7	15.0	36.1	0.0	21.4	38.2	0.0	26.2
Incr Delay (d2), s/veh	2.1	0.4	0.0	6.6	27.1	0.0	4.3	0.0	0.3	7.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.2	0.3	1.4	19.8	0.2	2.0	0.0	2.7	0.5	0.0	5.0
LnGrp Delay(d),s/veh	37.3	16.1	13.6	43.7	50.8	15.0	40.4	0.0	21.8	45.8	0.0	28.0
LnGrp LOS	D	B	B	D	D	B	D		C	D		C
Approach Vol, veh/h		395			758			245			270	
Approach Delay, s/veh		20.7			49.7			28.3			29.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	37.6	8.9	23.9	10.4	35.0	5.4	27.5
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.6	10.2	5.8	12.9	5.8	30.7	2.8	7.5
Green Ext Time (p_c), s	0.0	2.2	0.1	1.2	0.1	0.0	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	36.4
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	160	159	606	457	59	230	497	250	47	1302	161
Future Volume (veh/h)	74	160	159	606	457	59	230	497	250	47	1302	161
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	79	170	135	645	486	15	245	529	96	50	1385	76
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	440	594	849	765	675	21	697	1300	582	381	2170	921
Arrive On Green	0.13	0.17	0.17	0.15	0.19	0.19	0.14	0.37	0.37	0.11	0.34	0.34
Sat Flow, veh/h	3408	3505	2719	4954	3468	107	4954	3505	1568	3408	6346	2694
Grp Volume(v), veh/h	79	170	135	645	245	256	245	529	96	50	1385	76
Grp Sat Flow(s),veh/h/ln	1704	1752	1360	1651	1752	1823	1651	1752	1568	1704	1586	1347
Q Serve(g_s), s	2.3	4.8	4.1	14.4	14.9	14.9	5.1	12.7	4.7	1.5	20.9	2.2
Cycle Q Clear(g_c), s	2.3	4.8	4.1	14.4	14.9	14.9	5.1	12.7	4.7	1.5	20.9	2.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	440	594	849	765	341	355	697	1300	582	381	2170	921
V/C Ratio(X)	0.18	0.29	0.16	0.84	0.72	0.72	0.35	0.41	0.17	0.13	0.64	0.08
Avail Cap(c_a), veh/h	900	1418	1489	1308	709	738	1308	1418	635	900	2568	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	41.2	28.5	46.7	42.9	42.9	44.1	26.5	24.0	45.5	31.5	25.3
Incr Delay (d2), s/veh	0.1	0.3	0.1	1.0	2.9	2.8	0.1	0.3	0.2	0.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.4	1.6	6.6	7.5	7.8	2.3	6.2	2.0	0.7	9.2	0.8
LnGrp Delay(d),s/veh	44.2	41.5	28.5	47.7	45.7	45.6	44.3	26.8	24.1	45.6	32.0	25.4
LnGrp LOS	D	D	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		384			1146			870			1511	
Approach Delay, s/veh		37.5			46.8			31.4			32.1	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.6	25.3	21.0	44.9	19.7	28.1	17.7	48.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	16.4	6.8	7.1	22.9	4.3	16.9	3.5	14.7
Green Ext Time (p_c), s	1.2	1.5	0.5	14.3	0.1	2.8	0.1	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	365	37	8	958	24	28	2	1	27	2	136
Future Volume (veh/h)	54	365	37	8	958	24	28	2	1	27	2	136
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	61	415	35	9	1089	15	32	2	0	31	2	19
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	82	2522	210	17	1737	760	51	39	0	50	3	29
Arrive On Green	0.05	0.53	0.53	0.01	0.50	0.50	0.03	0.02	0.00	0.03	0.02	0.02
Sat Flow, veh/h	1757	4729	393	1757	3505	1532	1757	1845	0	1757	151	1439
Grp Volume(v), veh/h	61	293	157	9	1089	15	32	2	0	31	0	21
Grp Sat Flow(s),veh/h/ln	1757	1679	1765	1757	1752	1532	1757	1845	0	1757	0	1591
Q Serve(g_s), s	1.6	2.1	2.1	0.2	10.5	0.2	0.8	0.0	0.0	0.8	0.0	0.6
Cycle Q Clear(g_c), s	1.6	2.1	2.1	0.2	10.5	0.2	0.8	0.0	0.0	0.8	0.0	0.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.00	1.00		0.90
Lane Grp Cap(c), veh/h	82	1790	941	17	1737	760	51	39	0	50	0	33
V/C Ratio(X)	0.74	0.16	0.17	0.54	0.63	0.02	0.63	0.05	0.00	0.62	0.00	0.65
Avail Cap(c_a), veh/h	910	2535	1333	910	2646	1157	758	796	0	758	0	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	5.5	5.5	22.9	8.6	6.0	22.3	22.2	0.0	22.3	0.0	22.5
Incr Delay (d2), s/veh	4.8	0.1	0.1	9.9	0.5	0.0	4.6	0.2	0.0	4.6	0.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	1.0	0.2	5.1	0.1	0.5	0.0	0.0	0.5	0.0	0.3
LnGrp Delay(d),s/veh	26.6	5.6	5.7	32.7	9.1	6.0	26.8	22.4	0.0	26.9	0.0	30.3
LnGrp LOS	C	A	A	C	A	A	C	C		C		C
Approach Vol, veh/h		511			1113			34			52	
Approach Delay, s/veh		8.1			9.2			26.6			28.3	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	30.0	5.9	5.5	6.7	28.3	5.8	5.6
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	4.1	2.8	2.6	3.6	12.5	2.8	2.0
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.1	10.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	373	15	135	899	0	39	0	18	0	0	0
Future Volume (veh/h)	9	373	15	135	899	0	39	0	18	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	10	424	7	153	1022	0	44	0	2	0	0	-7
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	23	1925	584	201	2433	758	171	124	105	5	0	280
Arrive On Green	0.01	0.38	0.38	0.11	0.48	0.00	0.05	0.00	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1528	1757	5036	1568	3408	1845	1559	1757	1845	0
Grp Volume(v), veh/h	10	424	7	153	1022	0	44	0	2	0	-7	-7
Grp Sat Flow(s),veh/h/ln	1757	1679	1528	1757	1679	1568	1704	1845	1559	1757	1845	1568
Q Serve(g_s), s	0.2	1.9	0.1	2.8	4.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	1.9	0.1	2.8	4.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	23	1925	584	201	2433	758	171	124	105	5	0	0
V/C Ratio(X)	0.43	0.22	0.01	0.76	0.42	0.00	0.26	0.00	0.02	0.00	0.00	0.00
Avail Cap(c_a), veh/h	1064	4423	1342	1064	4423	1377	2374	1341	1133	1064	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	6.9	6.3	14.2	5.5	0.0	15.1	0.0	14.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	4.6	0.1	0.0	2.3	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.0	1.4	2.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	20.7	7.0	6.3	16.5	5.7	0.0	15.4	0.0	14.4	0.0	0.0	0.0
LnGrp LOS	C	A	A	B	A		B		B			
Approach Vol, veh/h		441			1175			46			-14	
Approach Delay, s/veh		7.3			7.1			15.3			0.0	
Approach LOS		A			A			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	17.9	6.2	0.7	4.9	21.3	0.0	6.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.8	3.9	2.4	0.0	2.2	6.3	0.0	2.0
Green Ext Time (p_c), s	0.2	3.7	0.0	0.0	0.0	9.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	257	102	5	686	22	24	0	6	40	2	331
Future Volume (veh/h)	101	257	102	5	686	22	24	0	6	40	2	331
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	116	295	51	6	789	8	28	0	5	46	2	94
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	506	2174	665	54	1507	457	133	0	499	96	6	278
Arrive On Green	0.15	0.43	0.43	0.02	0.30	0.30	0.04	0.00	0.16	0.05	0.18	0.18
Sat Flow, veh/h	3408	5036	1540	3408	5036	1528	3514	0	3032	1757	33	1533
Grp Volume(v), veh/h	116	295	51	6	789	8	28	0	5	46	0	96
Grp Sat Flow(s),veh/h/ln	1704	1679	1540	1704	1679	1528	1757	0	1516	1757	0	1565
Q Serve(g_s), s	1.7	2.0	1.1	0.1	7.3	0.2	0.4	0.0	0.1	1.4	0.0	3.0
Cycle Q Clear(g_c), s	1.7	2.0	1.1	0.1	7.3	0.2	0.4	0.0	0.1	1.4	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Lane Grp Cap(c), veh/h	506	2174	665	54	1507	457	133	0	499	96	0	284
V/C Ratio(X)	0.23	0.14	0.08	0.11	0.52	0.02	0.21	0.00	0.01	0.48	0.00	0.34
Avail Cap(c_a), veh/h	1208	3033	928	1208	3033	920	1245	0	1074	622	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	9.7	9.4	27.4	16.4	13.9	26.3	0.0	19.7	25.9	0.0	20.1
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.4	0.0	0.3	0.0	0.0	1.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.9	0.5	0.0	3.4	0.1	0.2	0.0	0.0	0.7	0.0	1.4
LnGrp Delay(d),s/veh	21.3	9.7	9.5	27.7	16.8	14.0	26.6	0.0	19.7	27.3	0.0	21.1
LnGrp LOS	C	A	A	C	B	B	C		B	C		C
Approach Vol, veh/h		462			803			33			142	
Approach Delay, s/veh		12.6			16.9			25.6			23.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	29.7	6.6	14.7	12.9	22.2	7.6	13.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.1	4.0	2.4	5.0	3.7	9.3	3.4	2.1
Green Ext Time (p_c), s	0.0	2.9	0.0	0.5	0.1	7.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	0	196	0	0	0	329	564	0	0	1208	357
Future Volume (veh/h)	177	0	196	0	0	0	329	564	0	0	1208	357
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	188	0	68	0	0	0	350	600	0	0	1285	251
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	537	0	455	3	3	0	525	2374	0	3	1546	680
Arrive On Green	0.15	0.00	0.15	0.00	0.00	0.00	0.15	0.68	0.00	0.00	0.44	0.44
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1542
Grp Volume(v), veh/h	188	0	68	0	0	0	350	600	0	0	1285	251
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1542
Q Serve(g_s), s	3.1	0.0	1.2	0.0	0.0	0.0	6.3	4.3	0.0	0.0	20.9	7.0
Cycle Q Clear(g_c), s	3.1	0.0	1.2	0.0	0.0	0.0	6.3	4.3	0.0	0.0	20.9	7.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	537	0	455	3	3	0	525	2374	0	3	1546	680
V/C Ratio(X)	0.35	0.00	0.15	0.00	0.00	0.00	0.67	0.25	0.00	0.00	0.83	0.37
Avail Cap(c_a), veh/h	1633	0	1458	326	342	0	1579	2374	0	326	1624	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	24.2	0.0	0.0	0.0	25.8	4.1	0.0	0.0	16.0	12.1
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.0	0.0	0.0	0.5	0.1	0.0	0.0	3.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.5	0.0	0.0	0.0	3.0	2.1	0.0	0.0	10.8	3.0
LnGrp Delay(d),s/veh	24.7	0.0	24.4	0.0	0.0	0.0	26.4	4.1	0.0	0.0	19.8	12.5
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		256			0			950			1536	
Approach Delay, s/veh		24.6			0.0			12.3			18.6	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	15.2	15.3	34.3	15.2	0.0	0.0	49.6
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	10.0	3.2	8.3	22.9	5.1	0.0	0.0	6.3
Green Ext Time (p_c), s	0.0	0.3	0.6	5.5	0.3	0.0	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	183	0	0	0	319	529	0	0	844	109
Future Volume (veh/h)	53	0	183	0	0	0	319	529	0	0	844	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	68	0	129	0	0	0	409	678	0	0	1082	69
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	315	0	280	0	3	0	459	3766	0	0	1449	637
Arrive On Green	0.09	0.00	0.09	0.00	0.00	0.00	0.26	0.75	0.00	0.00	0.41	0.41
Sat Flow, veh/h	3514	0	3115	0	1845	0	1757	5202	0	0	3597	1541
Grp Volume(v), veh/h	68	0	129	0	0	0	409	678	0	0	1082	69
Grp Sat Flow(s),veh/h/ln	1757	0	1557	0	1845	0	1757	1679	0	0	1752	1541
Q Serve(g_s), s	1.1	0.0	2.4	0.0	0.0	0.0	13.8	2.4	0.0	0.0	16.1	1.7
Cycle Q Clear(g_c), s	1.1	0.0	2.4	0.0	0.0	0.0	13.8	2.4	0.0	0.0	16.1	1.7
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	315	0	280	0	3	0	459	3766	0	0	1449	637
V/C Ratio(X)	0.22	0.00	0.46	0.00	0.00	0.00	0.89	0.18	0.00	0.00	0.75	0.11
Avail Cap(c_a), veh/h	1370	0	1215	0	929	0	571	3766	0	0	1709	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	26.6	0.0	0.0	0.0	21.9	2.3	0.0	0.0	15.3	11.1
Incr Delay (d2), s/veh	0.5	0.0	1.7	0.0	0.0	0.0	12.3	0.0	0.0	0.0	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.1	0.0	0.0	0.0	8.3	1.1	0.0	0.0	8.0	0.7
LnGrp Delay(d),s/veh	26.5	0.0	28.3	0.0	0.0	0.0	34.2	2.3	0.0	0.0	17.1	11.2
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		197			0			1087			1151	
Approach Delay, s/veh		27.7			0.0			14.3			16.7	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		10.5	20.6	30.4		0.0		51.0
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		4.4	15.8	18.1		0.0		4.4
Green Ext Time (p_c), s		1.0	0.3	7.1		0.0		6.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	158	44	163	329	66	108	494	100	101	1221	280
Future Volume (veh/h)	99	158	44	163	329	66	108	494	100	101	1221	280
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	116	186	14	192	387	72	127	581	46	119	1436	233
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	480	397	249	428	80	179	1531	667	143	1633	713
Arrive On Green	0.05	0.26	0.26	0.07	0.28	0.28	0.05	0.44	0.44	0.08	0.47	0.47
Sat Flow, veh/h	3408	1845	1526	3408	1505	280	3408	3505	1526	1757	3505	1532
Grp Volume(v), veh/h	116	186	14	192	0	459	127	581	46	119	1436	233
Grp Sat Flow(s),veh/h/ln	1704	1845	1526	1704	0	1785	1704	1752	1526	1757	1752	1532
Q Serve(g_s), s	4.4	10.8	0.9	7.2	0.0	32.2	4.8	14.5	2.3	8.7	48.2	12.5
Cycle Q Clear(g_c), s	4.4	10.8	0.9	7.2	0.0	32.2	4.8	14.5	2.3	8.7	48.2	12.5
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	480	397	249	0	507	179	1531	667	143	1633	713
V/C Ratio(X)	0.69	0.39	0.04	0.77	0.00	0.91	0.71	0.38	0.07	0.83	0.88	0.33
Avail Cap(c_a), veh/h	354	539	446	485	0	590	354	1531	667	209	1633	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.00	0.63	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	39.6	35.9	59.2	0.0	44.8	60.6	24.7	21.3	58.8	31.4	21.9
Incr Delay (d2), s/veh	3.8	0.9	0.1	2.4	0.0	12.0	3.4	0.6	0.2	14.2	7.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.6	0.4	3.5	0.0	17.5	2.3	7.2	1.0	4.8	24.9	5.5
LnGrp Delay(d),s/veh	64.6	40.4	36.0	61.6	0.0	56.8	64.1	25.4	21.4	73.0	38.5	23.1
LnGrp LOS	E	D	D	E		E	E	C	C	E	D	C
Approach Vol, veh/h		316			651			754			1788	
Approach Delay, s/veh		49.1			58.2			31.6			38.8	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	38.8	11.3	65.9	10.9	41.9	15.1	62.1
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	18.5	38.0	13.5	40.7	13.5	43.0	15.5	38.7
Max Q Clear Time (g_c+I1), s	9.2	12.8	6.8	50.2	6.4	34.2	10.7	16.5
Green Ext Time (p_c), s	0.3	1.7	0.1	0.0	0.1	2.7	0.1	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	118	49	16	285	79	32	135	9	52	134	241
Future Volume (veh/h)	187	118	49	16	285	79	32	135	9	52	134	241
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	312	197	72	27	475	57	53	225	13	87	223	85
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	353	618	226	40	562	463	67	326	19	112	397	337
Arrive On Green	0.20	0.48	0.48	0.02	0.30	0.30	0.04	0.19	0.19	0.06	0.22	0.22
Sat Flow, veh/h	1757	1280	468	1757	1845	1520	1757	1720	99	1757	1845	1568
Grp Volume(v), veh/h	312	0	269	27	475	57	53	0	238	87	223	85
Grp Sat Flow(s),veh/h/ln	1757	0	1747	1757	1845	1520	1757	0	1820	1757	1845	1568
Q Serve(g_s), s	13.2	0.0	7.2	1.2	18.5	2.1	2.3	0.0	9.4	3.7	8.3	3.5
Cycle Q Clear(g_c), s	13.2	0.0	7.2	1.2	18.5	2.1	2.3	0.0	9.4	3.7	8.3	3.5
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	353	0	844	40	562	463	67	0	345	112	397	337
V/C Ratio(X)	0.88	0.00	0.32	0.67	0.85	0.12	0.79	0.00	0.69	0.77	0.56	0.25
Avail Cap(c_a), veh/h	458	0	844	458	721	594	458	0	474	458	480	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	12.1	37.2	25.0	19.3	36.6	0.0	29.0	35.4	26.9	25.0
Incr Delay (d2), s/veh	12.8	0.0	0.3	7.1	8.3	0.2	7.4	0.0	3.5	4.2	1.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	0.0	3.5	0.6	10.7	0.9	1.2	0.0	5.0	1.9	4.4	1.5
LnGrp Delay(d),s/veh	42.6	0.0	12.4	44.3	33.3	19.5	44.0	0.0	32.6	39.6	28.7	25.6
LnGrp LOS	D		B	D	C	B	D		C	D	C	C
Approach Vol, veh/h		581			559			291			395	
Approach Delay, s/veh		28.6			32.4			34.7			30.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	42.1	7.4	21.0	19.9	28.4	9.4	19.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.2	9.2	4.3	10.3	15.2	20.5	5.7	11.4
Green Ext Time (p_c), s	0.0	2.0	0.0	1.5	0.2	2.8	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	119	34	7	229	100	41	120	15	85	175	110
Future Volume (veh/h)	29	119	34	7	229	100	41	120	15	85	175	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	44	180	14	11	347	35	62	182	20	129	265	152
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	62	884	390	20	800	344	78	518	57	167	393	226
Arrive On Green	0.04	0.25	0.25	0.01	0.23	0.23	0.04	0.32	0.32	0.09	0.37	0.37
Sat Flow, veh/h	1757	3505	1546	1757	3505	1505	1757	1618	178	1757	1060	608
Grp Volume(v), veh/h	44	180	14	11	347	35	62	0	202	129	0	417
Grp Sat Flow(s),veh/h/ln	1757	1752	1546	1757	1752	1505	1757	0	1796	1757	0	1669
Q Serve(g_s), s	1.4	2.3	0.4	0.4	4.9	1.1	2.0	0.0	5.0	4.1	0.0	12.1
Cycle Q Clear(g_c), s	1.4	2.3	0.4	0.4	4.9	1.1	2.0	0.0	5.0	4.1	0.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		0.36
Lane Grp Cap(c), veh/h	62	884	390	20	800	344	78	0	575	167	0	619
V/C Ratio(X)	0.71	0.20	0.04	0.56	0.43	0.10	0.79	0.00	0.35	0.77	0.00	0.67
Avail Cap(c_a), veh/h	610	1825	805	610	1825	784	610	0	748	610	0	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	17.0	16.3	28.3	19.0	17.6	27.3	0.0	15.0	25.5	0.0	15.2
Incr Delay (d2), s/veh	5.6	0.2	0.1	8.9	0.5	0.2	6.7	0.0	0.5	2.9	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.1	0.2	0.2	2.4	0.5	1.1	0.0	2.6	2.1	0.0	6.0
LnGrp Delay(d),s/veh	33.1	17.1	16.3	37.2	19.6	17.7	33.9	0.0	15.5	28.3	0.0	17.8
LnGrp LOS	C	B	B	D	B	B	C		B	C		B
Approach Vol, veh/h		238			393			264			546	
Approach Delay, s/veh		20.0			19.9			19.8			20.3	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	19.5	7.1	25.9	6.5	18.2	10.0	23.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.4	4.3	4.0	14.1	3.4	6.9	6.1	7.0
Green Ext Time (p_c), s	0.0	1.5	0.1	2.6	0.0	3.1	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	213	85	328	264	98	77	549	114	106	1148	240
Future Volume (veh/h)	121	213	85	328	264	98	77	549	114	106	1148	240
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	148	260	34	400	322	46	94	670	33	129	1400	133
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	348	494	601	478	565	476	326	1513	468	177	1513	457
Arrive On Green	0.10	0.27	0.27	0.14	0.31	0.31	0.10	0.30	0.30	0.10	0.30	0.30
Sat Flow, veh/h	3408	1845	2244	3408	1845	1554	3408	5036	1558	1757	5036	1522
Grp Volume(v), veh/h	148	260	34	400	322	46	94	670	33	129	1400	133
Grp Sat Flow(s),veh/h/ln	1704	1845	1122	1704	1845	1554	1704	1679	1558	1757	1679	1522
Q Serve(g_s), s	3.9	11.5	1.1	11.0	14.1	2.0	2.5	10.3	1.5	6.8	25.9	6.4
Cycle Q Clear(g_c), s	3.9	11.5	1.1	11.0	14.1	2.0	2.5	10.3	1.5	6.8	25.9	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	494	601	478	565	476	326	1513	468	177	1513	457
V/C Ratio(X)	0.43	0.53	0.06	0.84	0.57	0.10	0.29	0.44	0.07	0.73	0.93	0.29
Avail Cap(c_a), veh/h	710	576	701	710	576	485	710	1573	486	366	1520	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	30.0	26.1	40.2	28.0	23.8	40.4	27.1	24.0	41.9	32.6	25.8
Incr Delay (d2), s/veh	0.3	1.2	0.1	3.6	1.6	0.1	0.2	0.3	0.1	2.2	10.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.0	0.3	5.4	7.4	0.9	1.2	4.8	0.6	3.4	13.3	2.8
LnGrp Delay(d),s/veh	40.8	31.2	26.2	43.9	29.6	24.0	40.6	27.4	24.1	44.1	42.7	26.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	C
Approach Vol, veh/h		442			768			797			1662	
Approach Delay, s/veh		34.0			36.7			28.8			41.5	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.5	30.7	13.7	34.2	13.8	34.4	13.7	34.2
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	13.0	13.5	4.5	27.9	5.9	16.1	8.8	12.3
Green Ext Time (p_c), s	0.5	2.0	0.1	1.0	0.2	2.3	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	272	32	52	447	8	20	8	63	4	5	51
Future Volume (veh/h)	15	272	32	52	447	8	20	8	63	4	5	51
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	19	344	21	66	566	6	25	10	10	5	6	7
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	33	741	611	90	801	661	42	81	81	9	58	68
Arrive On Green	0.02	0.40	0.40	0.05	0.43	0.43	0.02	0.10	0.10	0.01	0.08	0.08
Sat Flow, veh/h	1757	1845	1520	1757	1845	1521	1757	834	834	1757	751	876
Grp Volume(v), veh/h	19	344	21	66	566	6	25	0	20	5	0	13
Grp Sat Flow(s),veh/h/ln	1757	1845	1520	1757	1845	1521	1757	0	1668	1757	0	1627
Q Serve(g_s), s	0.4	5.7	0.3	1.5	10.4	0.1	0.6	0.0	0.5	0.1	0.0	0.3
Cycle Q Clear(g_c), s	0.4	5.7	0.3	1.5	10.4	0.1	0.6	0.0	0.5	0.1	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.54
Lane Grp Cap(c), veh/h	33	741	611	90	801	661	42	0	161	9	0	127
V/C Ratio(X)	0.57	0.46	0.03	0.73	0.71	0.01	0.59	0.00	0.12	0.53	0.00	0.10
Avail Cap(c_a), veh/h	1014	1774	1462	1014	1774	1463	1014	0	1083	1014	0	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	9.1	7.5	19.4	9.6	6.7	20.1	0.0	17.2	20.6	0.0	17.8
Incr Delay (d2), s/veh	5.6	0.6	0.0	4.2	1.6	0.0	4.8	0.0	0.1	15.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	0.2	0.8	5.6	0.0	0.3	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	25.8	9.8	7.6	23.7	11.2	6.7	24.9	0.0	17.3	36.4	0.0	18.0
LnGrp LOS	C	A	A	C	B	A	C		B	D		B
Approach Vol, veh/h		384			638			45			18	
Approach Delay, s/veh		10.5			12.5			21.5			23.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	21.7	5.5	7.7	5.3	23.1	4.7	8.5
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	3.5	7.7	2.6	2.3	2.4	12.4	2.1	2.5
Green Ext Time (p_c), s	0.1	3.2	0.0	0.0	0.0	5.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	14	67	15	7	137
Future Vol, veh/h	39	14	67	15	7	137
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	51	18	88	20	9	180
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8	7.8	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	74%	5%
Vol Thru, %	82%	0%	95%
Vol Right, %	18%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	82	53	144
LT Vol	0	39	7
Through Vol	67	0	137
RT Vol	15	14	0
Lane Flow Rate	108	70	189
Geometry Grp	1	1	1
Degree of Util (X)	0.123	0.089	0.219
Departure Headway (Hd)	4.108	4.589	4.166
Convergence, Y/N	Yes	Yes	Yes
Cap	858	785	851
Service Time	2.207	2.589	2.243
HCM Lane V/C Ratio	0.126	0.089	0.222
HCM Control Delay	7.8	8	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.3	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	94	68	101	56	86	38	566	116	48	616	29
Future Volume (veh/h)	40	94	68	101	56	86	38	566	116	48	616	29
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	56	132	14	142	79	65	54	797	90	68	868	23
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	219	184	215	119	98	95	2140	937	101	2153	956
Arrive On Green	0.05	0.12	0.12	0.06	0.13	0.13	0.05	0.61	0.61	0.06	0.61	0.61
Sat Flow, veh/h	1757	1845	1548	3408	936	770	1757	3505	1536	1757	3505	1556
Grp Volume(v), veh/h	56	132	14	142	0	144	54	797	90	68	868	23
Grp Sat Flow(s),veh/h/ln	1757	1845	1548	1704	0	1707	1757	1752	1536	1757	1752	1556
Q Serve(g_s), s	3.9	8.6	1.0	5.1	0.0	10.1	3.8	14.4	3.1	4.8	16.0	0.7
Cycle Q Clear(g_c), s	3.9	8.6	1.0	5.1	0.0	10.1	3.8	14.4	3.1	4.8	16.0	0.7
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	219	184	215	0	217	95	2140	937	101	2153	956
V/C Ratio(X)	0.58	0.60	0.08	0.66	0.00	0.66	0.57	0.37	0.10	0.67	0.40	0.02
Avail Cap(c_a), veh/h	160	562	472	527	0	520	160	2140	937	160	2153	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.00	0.95	0.73	0.73	0.73	0.93	0.93	0.93
Uniform Delay (d), s/veh	58.2	52.7	49.4	57.7	0.0	52.4	58.2	12.4	10.2	58.2	12.5	9.5
Incr Delay (d2), s/veh	4.1	2.0	0.1	2.4	0.0	2.4	2.9	0.4	0.1	5.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.5	0.4	2.5	0.0	4.9	1.9	7.1	1.3	2.5	7.9	0.3
LnGrp Delay(d),s/veh	62.3	54.7	49.5	60.2	0.0	54.8	61.1	12.7	10.3	63.4	13.0	9.6
LnGrp LOS	E	D	D	E		D	E	B	B	E	B	A
Approach Vol, veh/h		202			286			941			959	
Approach Delay, s/veh		56.4			57.5			15.3			16.5	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	19.6	11.3	82.7	11.4	20.6	11.8	82.2
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	38.4	11.5	31.7	11.5	38.4	11.5	* 38
Max Q Clear Time (g_c+I1), s	7.1	10.6	5.8	18.0	5.9	12.1	6.8	16.4
Green Ext Time (p_c), s	0.2	0.6	0.0	6.5	0.0	0.6	0.0	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	221	10	18	207	32	8	20	13	18	26	28
Future Volume (veh/h)	27	221	10	18	207	32	8	20	13	18	26	28
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	44	356	14	29	334	25	13	32	3	29	42	13
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	605	24	49	612	519	24	148	14	49	140	43
Arrive On Green	0.04	0.34	0.34	0.03	0.33	0.33	0.01	0.09	0.09	0.03	0.10	0.10
Sat Flow, veh/h	1757	1763	69	1757	1845	1566	1757	1651	155	1757	1352	419
Grp Volume(v), veh/h	44	0	370	29	334	25	13	0	35	29	0	55
Grp Sat Flow(s),veh/h/ln	1757	0	1832	1757	1845	1566	1757	0	1806	1757	0	1771
Q Serve(g_s), s	0.9	0.0	6.0	0.6	5.3	0.4	0.3	0.0	0.7	0.6	0.0	1.0
Cycle Q Clear(g_c), s	0.9	0.0	6.0	0.6	5.3	0.4	0.3	0.0	0.7	0.6	0.0	1.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.09	1.00		0.24
Lane Grp Cap(c), veh/h	69	0	629	49	612	519	24	0	162	49	0	184
V/C Ratio(X)	0.63	0.00	0.59	0.59	0.55	0.05	0.55	0.00	0.22	0.59	0.00	0.30
Avail Cap(c_a), veh/h	510	0	2380	1165	2397	2034	364	0	1647	364	0	1175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	9.8	17.4	9.9	8.2	17.7	0.0	15.3	17.4	0.0	15.0
Incr Delay (d2), s/veh	3.5	0.0	1.3	4.1	1.1	0.1	7.1	0.0	0.2	4.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.2	0.3	2.9	0.2	0.2	0.0	0.3	0.3	0.0	0.5
LnGrp Delay(d),s/veh	20.6	0.0	11.0	21.5	10.9	8.3	24.8	0.0	15.5	21.5	0.0	15.3
LnGrp LOS	C		B	C	B	A	C		B	C		B
Approach Vol, veh/h		414			388			48			84	
Approach Delay, s/veh		12.0			11.6			18.0			17.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	17.4	5.0	8.3	5.9	17.0	5.5	7.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.3	3.0	2.9	7.3	2.6	2.7
Green Ext Time (p_c), s	0.0	3.5	0.0	0.1	0.0	3.2	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	233	26	86	105	4	104	42	107	10	40	24
Future Volume (veh/h)	82	233	26	86	105	4	104	42	107	10	40	24
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	126	358	12	132	162	1	160	65	139	15	62	15
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	163	547	455	171	556	469	467	133	284	352	365	88
Arrive On Green	0.09	0.30	0.30	0.10	0.30	0.30	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1757	1845	1535	1757	1845	1555	1295	522	1116	1156	1433	347
Grp Volume(v), veh/h	126	358	12	132	162	1	160	0	204	15	0	77
Grp Sat Flow(s),veh/h/ln	1757	1845	1535	1757	1845	1555	1295	0	1637	1156	0	1780
Q Serve(g_s), s	2.8	6.8	0.2	2.9	2.7	0.0	4.4	0.0	4.2	0.4	0.0	1.3
Cycle Q Clear(g_c), s	2.8	6.8	0.2	2.9	2.7	0.0	5.7	0.0	4.2	4.7	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.68	1.00		0.19
Lane Grp Cap(c), veh/h	163	547	455	171	556	469	467	0	417	352	0	453
V/C Ratio(X)	0.77	0.65	0.03	0.77	0.29	0.00	0.34	0.00	0.49	0.04	0.00	0.17
Avail Cap(c_a), veh/h	881	1388	1155	881	1388	1170	787	0	821	638	0	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	12.2	9.9	17.6	10.7	9.7	13.8	0.0	12.6	14.6	0.0	11.6
Incr Delay (d2), s/veh	2.9	1.9	0.0	2.8	0.4	0.0	0.6	0.0	1.3	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.7	0.1	1.5	1.4	0.0	1.6	0.0	2.0	0.1	0.0	0.7
LnGrp Delay(d),s/veh	20.6	14.1	10.0	20.3	11.1	9.7	14.4	0.0	13.9	14.7	0.0	11.8
LnGrp LOS	C	B	A	C	B	A	B		B	B		B
Approach Vol, veh/h		496			295			364			92	
Approach Delay, s/veh		15.7			15.2			14.1			12.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	16.8		14.7	8.2	17.0		14.7
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	4.9	8.8		6.7	4.8	4.7		7.7
Green Ext Time (p_c), s	0.1	3.0		0.4	0.1	1.2		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	254	37	7	145	12	19	44	9	10	24	32
Future Volume (veh/h)	56	254	37	7	145	12	19	44	9	10	24	32
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	85	385	29	11	220	7	29	67	6	15	36	6
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	177	630	535	20	466	392	48	296	26	27	254	42
Arrive On Green	0.10	0.34	0.34	0.01	0.25	0.25	0.03	0.18	0.18	0.02	0.17	0.17
Sat Flow, veh/h	1757	1845	1568	1757	1845	1552	1757	1667	149	1757	1536	256
Grp Volume(v), veh/h	85	385	29	11	220	7	29	0	73	15	0	42
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1552	1757	0	1816	1757	0	1792
Q Serve(g_s), s	1.8	6.9	0.5	0.2	4.0	0.1	0.6	0.0	1.4	0.3	0.0	0.8
Cycle Q Clear(g_c), s	1.8	6.9	0.5	0.2	4.0	0.1	0.6	0.0	1.4	0.3	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.14
Lane Grp Cap(c), veh/h	177	630	535	20	466	392	48	0	322	27	0	296
V/C Ratio(X)	0.48	0.61	0.05	0.54	0.47	0.02	0.60	0.00	0.23	0.56	0.00	0.14
Avail Cap(c_a), veh/h	887	1397	1187	887	1397	1175	887	0	1100	887	0	1086
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	10.9	8.8	19.5	12.6	11.1	19.0	0.0	14.0	19.4	0.0	14.1
Incr Delay (d2), s/veh	0.8	1.4	0.1	8.2	1.1	0.0	4.3	0.0	0.4	6.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.7	0.2	0.2	2.2	0.1	0.4	0.0	0.7	0.2	0.0	0.4
LnGrp Delay(d),s/veh	17.6	12.2	8.8	27.7	13.6	11.1	23.4	0.0	14.3	25.9	0.0	14.4
LnGrp LOS	B	B	A	C	B	B	C		B	C		B
Approach Vol, veh/h		499			238			102			57	
Approach Delay, s/veh		12.9			14.2			16.9			17.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	18.5	5.1	11.0	8.5	15.0	4.6	11.5
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.5	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.2	8.9	2.6	2.8	3.8	6.0	2.3	3.4
Green Ext Time (p_c), s	0.0	3.3	0.0	0.1	0.1	1.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	488	345	286	203	42	209	454	241	57	610	99
Future Volume (veh/h)	192	488	345	286	203	42	209	454	241	57	610	99
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	267	678	453	397	282	15	290	631	91	79	847	37
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	511	904	1126	744	873	46	743	876	387	462	1494	647
Arrive On Green	0.15	0.26	0.26	0.15	0.26	0.26	0.15	0.25	0.25	0.14	0.24	0.24
Sat Flow, veh/h	3408	3505	2760	4954	3382	179	4954	3505	1548	3408	6346	2749
Grp Volume(v), veh/h	267	678	453	397	145	152	290	631	91	79	847	37
Grp Sat Flow(s),veh/h/ln	1704	1752	1380	1651	1752	1809	1651	1752	1548	1704	1586	1375
Q Serve(g_s), s	7.7	19.0	12.4	7.9	7.2	7.2	5.6	17.6	5.0	2.2	12.6	1.1
Cycle Q Clear(g_c), s	7.7	19.0	12.4	7.9	7.2	7.2	5.6	17.6	5.0	2.2	12.6	1.1
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	904	1126	744	452	467	743	876	387	462	1494	647
V/C Ratio(X)	0.52	0.75	0.40	0.53	0.32	0.32	0.39	0.72	0.24	0.17	0.57	0.06
Avail Cap(c_a), veh/h	959	1512	1605	1394	756	780	1394	1512	668	959	2738	1186
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	36.4	22.3	41.9	32.0	32.0	40.9	36.6	31.9	40.8	36.0	31.6
Incr Delay (d2), s/veh	0.3	1.3	0.2	0.2	0.4	0.4	0.1	1.6	0.4	0.1	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	9.3	4.8	3.6	3.5	3.7	2.6	8.7	2.2	1.0	5.6	0.4
LnGrp Delay(d),s/veh	42.1	37.7	22.6	42.1	32.4	32.4	41.0	38.2	32.3	40.8	36.4	31.6
LnGrp LOS	D	D	C	D	C	C	D	D	C	D	D	C
Approach Vol, veh/h		1398			694			1012			963	
Approach Delay, s/veh		33.6			37.9			38.5			36.6	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	33.5	21.0	31.1	21.0	33.5	19.5	32.6
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	9.9	21.0	7.6	14.6	9.7	9.2	4.2	19.6
Green Ext Time (p_c), s	0.7	6.5	0.6	9.5	0.4	1.6	0.1	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	36.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	682	46	7	426	15	53	5	1	14	3	50
Future Volume (veh/h)	58	682	46	7	426	15	53	5	1	14	3	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	82	961	61	10	600	8	75	7	0	20	4	8
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	2129	135	18	1367	597	100	91	0	35	7	14
Arrive On Green	0.06	0.44	0.44	0.01	0.39	0.39	0.06	0.05	0.00	0.02	0.01	0.01
Sat Flow, veh/h	1757	4841	307	1757	3505	1531	1757	1845	0	1757	550	1100
Grp Volume(v), veh/h	82	666	356	10	600	8	75	7	0	20	0	12
Grp Sat Flow(s),veh/h/ln	1757	1679	1791	1757	1752	1531	1757	1845	0	1757	0	1650
Q Serve(g_s), s	1.8	5.5	5.5	0.2	5.0	0.1	1.7	0.1	0.0	0.4	0.0	0.3
Cycle Q Clear(g_c), s	1.8	5.5	5.5	0.2	5.0	0.1	1.7	0.1	0.0	0.4	0.0	0.3
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.00	1.00		0.67
Lane Grp Cap(c), veh/h	106	1476	787	18	1367	597	100	91	0	35	0	21
V/C Ratio(X)	0.78	0.45	0.45	0.54	0.44	0.01	0.75	0.08	0.00	0.57	0.00	0.58
Avail Cap(c_a), veh/h	1072	2987	1593	1072	3118	1362	893	938	0	893	0	839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	7.7	7.7	19.4	8.8	7.4	18.3	17.8	0.0	19.1	0.0	19.3
Incr Delay (d2), s/veh	4.5	0.3	0.6	8.8	0.3	0.0	4.2	0.1	0.0	5.3	0.0	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.6	2.8	0.2	2.4	0.1	0.9	0.1	0.0	0.3	0.0	0.2
LnGrp Delay(d),s/veh	22.7	8.0	8.3	28.2	9.1	7.4	22.5	18.0	0.0	24.4	0.0	28.6
LnGrp LOS	C	A	A	C	A	A	C	B		C		C
Approach Vol, veh/h		1104			618			82			32	
Approach Delay, s/veh		9.2			9.4			22.1			26.0	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	22.6	6.7	5.1	6.9	20.6	5.3	6.5
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	7.5	3.7	2.3	3.8	7.0	2.4	2.1
Green Ext Time (p_c), s	0.0	9.8	0.1	0.0	0.1	5.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	635	35	152	376	0	44	0	42	0	0	0
Future Volume (veh/h)	16	635	35	152	376	0	44	0	42	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	23	907	21	217	537	0	63	0	6	0	0	-1
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	49	2123	657	276	2775	864	208	177	148	4	0	280
Arrive On Green	0.03	0.42	0.42	0.16	0.55	0.00	0.06	0.00	0.10	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1559	1757	5036	1568	3408	1845	1547	1757	1845	0
Grp Volume(v), veh/h	23	907	21	217	537	0	63	0	6	0	-1	-1
Grp Sat Flow(s),veh/h/ln	1757	1679	1559	1757	1679	1568	1704	1845	1547	1757	1845	1568
Q Serve(g_s), s	0.6	5.6	0.3	5.3	2.4	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	5.6	0.3	5.3	2.4	0.0	0.8	0.0	0.2	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	49	2123	657	276	2775	864	208	177	148	4	0	0
V/C Ratio(X)	0.47	0.43	0.03	0.79	0.19	0.00	0.30	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	794	3299	1021	794	3299	1027	1771	1000	839	794	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	21.2	9.0	7.5	17.9	5.0	0.0	19.9	0.0	18.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.2	0.0	1.9	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.6	0.2	2.7	1.1	0.0	0.4	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	23.8	9.2	7.5	19.8	5.0	0.0	20.2	0.0	18.2	0.0	0.0	0.0
LnGrp LOS	C	A	A	B	A		C		B			
Approach Vol, veh/h		951			754			69			-2	
Approach Delay, s/veh		9.5			9.3			20.0			0.0	
Approach LOS		A			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	24.0	7.2	1.6	5.7	29.7	0.0	8.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	7.3	7.6	2.8	0.0	2.6	4.4	0.0	2.2
Green Ext Time (p_c), s	0.2	8.2	0.1	0.0	0.0	4.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	570	40	2	265	20	66	0	5	28	1	92
Future Volume (veh/h)	144	570	40	2	265	20	66	0	5	28	1	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	209	826	25	3	384	9	96	0	6	41	1	27
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	643	1962	610	28	1053	318	310	0	545	91	8	210
Arrive On Green	0.19	0.39	0.39	0.01	0.21	0.21	0.09	0.00	0.17	0.05	0.14	0.14
Sat Flow, veh/h	3408	5036	1567	3408	5036	1519	3514	0	3112	1757	56	1516
Grp Volume(v), veh/h	209	826	25	3	384	9	96	0	6	41	0	28
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1519	1757	0	1556	1757	0	1572
Q Serve(g_s), s	2.7	6.0	0.5	0.0	3.3	0.2	1.3	0.0	0.1	1.1	0.0	0.8
Cycle Q Clear(g_c), s	2.7	6.0	0.5	0.0	3.3	0.2	1.3	0.0	0.1	1.1	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.96
Lane Grp Cap(c), veh/h	643	1962	610	28	1053	318	310	0	545	91	0	218
V/C Ratio(X)	0.32	0.42	0.04	0.11	0.36	0.03	0.31	0.00	0.01	0.45	0.00	0.13
Avail Cap(c_a), veh/h	1360	3417	1063	1360	3417	1031	1402	0	1242	701	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	11.2	9.5	24.7	17.0	15.8	21.4	0.0	17.1	23.1	0.0	18.9
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.6	0.3	0.1	0.2	0.0	0.0	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.8	0.2	0.0	1.5	0.1	0.6	0.0	0.0	0.6	0.0	0.4
LnGrp Delay(d),s/veh	17.7	11.4	9.5	25.3	17.3	15.8	21.6	0.0	17.1	24.3	0.0	19.3
LnGrp LOS	B	B	A	C	B	B	C		B	C		B
Approach Vol, veh/h		1060			396			102			69	
Approach Delay, s/veh		12.6			17.3			21.4			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	24.8	8.9	11.5	14.0	15.8	7.1	13.3
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	8.0	3.3	2.8	4.7	5.3	3.1	2.1
Green Ext Time (p_c), s	0.0	8.0	0.1	0.1	0.3	3.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	0	361	0	0	0	114	490	0	0	572	138
Future Volume (veh/h)	257	0	361	0	0	0	114	490	0	0	572	138
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	367	0	177	0	0	0	163	700	0	0	817	70
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	605	0	611	3	3	0	545	2128	0	3	1248	555
Arrive On Green	0.17	0.00	0.19	0.00	0.00	0.00	0.16	0.61	0.00	0.00	0.36	0.36
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1559
Grp Volume(v), veh/h	367	0	177	0	0	0	163	700	0	0	817	70
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1559
Q Serve(g_s), s	5.6	0.0	2.8	0.0	0.0	0.0	2.4	5.7	0.0	0.0	11.4	1.8
Cycle Q Clear(g_c), s	5.6	0.0	2.8	0.0	0.0	0.0	2.4	5.7	0.0	0.0	11.4	1.8
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	605	0	611	3	3	0	545	2128	0	3	1248	555
V/C Ratio(X)	0.61	0.00	0.29	0.00	0.00	0.00	0.30	0.33	0.00	0.00	0.65	0.13
Avail Cap(c_a), veh/h	1822	0	1626	363	381	0	1761	2128	0	363	1811	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	19.9	0.0	0.0	0.0	21.5	5.6	0.0	0.0	15.7	12.6
Incr Delay (d2), s/veh	0.4	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	1.2	0.0	0.0	0.0	1.2	2.8	0.0	0.0	5.6	0.8
LnGrp Delay(d),s/veh	22.6	0.0	20.3	0.0	0.0	0.0	21.6	5.7	0.0	0.0	16.5	12.7
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		544			0			863			887	
Approach Delay, s/veh		21.8			0.0			8.7			16.2	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	17.1	14.6	26.4	15.3	1.8	0.0	40.9
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	10.0	4.8	4.4	13.4	7.6	0.0	0.0	7.7
Green Ext Time (p_c), s	0.0	1.0	0.3	6.7	0.6	0.0	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	152	0	0	0	97	326	0	0	323	78
Future Volume (veh/h)	41	0	152	0	0	0	97	326	0	0	323	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	68	0	150	0	0	0	162	543	0	0	538	45
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	466	0	416	0	5	0	211	2922	0	0	1160	511
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.00	0.12	0.58	0.00	0.00	0.33	0.33
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1543
Grp Volume(v), veh/h	68	0	150	0	0	0	162	543	0	0	538	45
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1543
Q Serve(g_s), s	0.6	0.0	1.5	0.0	0.0	0.0	3.1	1.8	0.0	0.0	4.2	0.7
Cycle Q Clear(g_c), s	0.6	0.0	1.5	0.0	0.0	0.0	3.1	1.8	0.0	0.0	4.2	0.7
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	466	0	416	0	5	0	211	2922	0	0	1160	511
V/C Ratio(X)	0.15	0.00	0.36	0.00	0.00	0.00	0.77	0.19	0.00	0.00	0.46	0.09
Avail Cap(c_a), veh/h	2421	0	2161	0	1642	0	1009	4338	0	0	3019	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	13.8	0.0	0.0	0.0	14.9	3.4	0.0	0.0	9.2	8.0
Incr Delay (d2), s/veh	0.2	0.0	0.7	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.7	0.0	0.0	0.0	1.6	0.8	0.0	0.0	2.1	0.3
LnGrp Delay(d),s/veh	13.6	0.0	14.5	0.0	0.0	0.0	17.1	3.5	0.0	0.0	9.6	8.1
LnGrp LOS	B		B				B	A			A	A
Approach Vol, veh/h		218			0			705			583	
Approach Delay, s/veh		14.2			0.0			6.6			9.5	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.6	8.7	16.5		0.0		25.2
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		3.5	5.1	6.2		0.0		3.8
Green Ext Time (p_c), s		1.1	0.2	4.9		0.0		4.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	135	94	83	75	57	45	562	84	33	515	78
Future Volume (veh/h)	186	135	94	83	75	57	45	562	84	33	515	78
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	262	190	26	117	106	55	63	792	60	46	725	56
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	322	301	251	172	136	71	125	2075	928	59	2065	921
Arrive On Green	0.09	0.16	0.16	0.05	0.12	0.12	0.04	0.59	0.59	0.03	0.59	0.59
Sat Flow, veh/h	3408	1845	1541	3408	1144	594	3408	3505	1567	1757	3505	1564
Grp Volume(v), veh/h	262	190	26	117	0	161	63	792	60	46	725	56
Grp Sat Flow(s),veh/h/ln	1704	1845	1541	1704	0	1738	1704	1752	1567	1757	1752	1564
Q Serve(g_s), s	9.0	11.5	1.7	4.1	0.0	10.8	2.2	14.3	1.9	3.1	12.9	1.8
Cycle Q Clear(g_c), s	9.0	11.5	1.7	4.1	0.0	10.8	2.2	14.3	1.9	3.1	12.9	1.8
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	301	251	172	0	207	125	2075	928	59	2065	921
V/C Ratio(X)	0.81	0.63	0.10	0.68	0.00	0.78	0.51	0.38	0.06	0.78	0.35	0.06
Avail Cap(c_a), veh/h	440	538	450	383	0	478	327	2075	928	168	2065	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.00	0.97	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	46.9	42.8	56.0	0.0	51.3	56.7	12.9	10.4	57.5	12.8	10.5
Incr Delay (d2), s/veh	7.2	3.7	0.3	3.4	0.0	10.0	2.2	0.5	0.1	15.0	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.2	0.8	2.0	0.0	5.8	1.1	7.1	0.9	1.8	6.3	0.8
LnGrp Delay(d),s/veh	60.6	50.6	43.1	59.4	0.0	61.3	58.9	13.4	10.5	72.6	13.2	10.6
LnGrp LOS	E	D	D	E		E	E	B	B	E	B	B
Approach Vol, veh/h		478			278			915			827	
Approach Delay, s/veh		55.6			60.5			16.3			16.4	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	24.6	8.9	76.0	15.8	19.3	8.5	76.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.5	35.0	11.5	40.7	15.5	33.0	11.5	40.7
Max Q Clear Time (g_c+I1), s	6.1	13.5	4.2	14.9	11.0	12.8	5.1	16.3
Green Ext Time (p_c), s	0.1	1.7	0.0	7.1	0.3	1.2	0.0	7.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	173	20	3	100	9	34	23	5	16	31	81
Future Volume (veh/h)	59	173	20	3	100	9	34	23	5	16	31	81
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	104	304	31	5	175	5	60	40	2	28	54	23
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	567	58	10	507	429	87	217	11	47	188	160
Arrive On Green	0.08	0.35	0.35	0.01	0.28	0.28	0.05	0.12	0.12	0.03	0.10	0.10
Sat Flow, veh/h	1757	1643	168	1757	1845	1559	1757	1739	87	1757	1845	1568
Grp Volume(v), veh/h	104	0	335	5	175	5	60	0	42	28	54	23
Grp Sat Flow(s),veh/h/ln	1757	0	1811	1757	1845	1559	1757	0	1825	1757	1845	1568
Q Serve(g_s), s	2.2	0.0	5.5	0.1	2.8	0.1	1.2	0.0	0.8	0.6	1.0	0.5
Cycle Q Clear(g_c), s	2.2	0.0	5.5	0.1	2.8	0.1	1.2	0.0	0.8	0.6	1.0	0.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	133	0	625	10	507	429	87	0	228	47	188	160
V/C Ratio(X)	0.78	0.00	0.54	0.53	0.34	0.01	0.69	0.00	0.18	0.59	0.29	0.14
Avail Cap(c_a), veh/h	946	0	1462	946	1489	1259	946	0	983	946	993	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	9.8	18.4	10.8	9.8	17.4	0.0	14.6	17.9	15.4	15.2
Incr Delay (d2), s/veh	3.8	0.0	1.0	15.7	0.6	0.0	3.5	0.0	0.6	4.3	1.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.9	0.1	1.5	0.0	0.7	0.0	0.4	0.3	0.6	0.2
LnGrp Delay(d),s/veh	20.7	0.0	10.8	34.1	11.4	9.8	20.9	0.0	15.1	22.2	16.6	15.8
LnGrp LOS	C		B	C	B	A	C		B	C	B	B
Approach Vol, veh/h		439			185			102			105	
Approach Delay, s/veh		13.1			11.9			18.5			17.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.7	17.8	6.3	8.3	7.3	15.2	5.5	9.1
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.1	7.5	3.2	3.0	4.2	4.8	2.6	2.8
Green Ext Time (p_c), s	0.0	2.7	0.1	0.3	0.1	1.3	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	133	23	4	60	35	14	96	3	42	55	38
Future Volume (veh/h)	39	133	23	4	60	35	14	96	3	42	55	38
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	72	246	15	7	111	21	26	178	4	78	102	55
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	91	997	444	13	841	375	42	525	12	99	347	187
Arrive On Green	0.05	0.28	0.28	0.01	0.24	0.24	0.02	0.29	0.29	0.06	0.32	0.32
Sat Flow, veh/h	1757	3505	1560	1757	3505	1561	1757	1795	40	1757	1070	577
Grp Volume(v), veh/h	72	246	15	7	111	21	26	0	182	78	0	157
Grp Sat Flow(s),veh/h/ln	1757	1752	1560	1757	1752	1561	1757	0	1836	1757	0	1647
Q Serve(g_s), s	2.1	2.8	0.4	0.2	1.3	0.5	0.8	0.0	4.0	2.3	0.0	3.7
Cycle Q Clear(g_c), s	2.1	2.8	0.4	0.2	1.3	0.5	0.8	0.0	4.0	2.3	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.35
Lane Grp Cap(c), veh/h	91	997	444	13	841	375	42	0	537	99	0	535
V/C Ratio(X)	0.79	0.25	0.03	0.54	0.13	0.06	0.61	0.00	0.34	0.79	0.00	0.29
Avail Cap(c_a), veh/h	682	2042	909	682	2042	910	682	0	856	682	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	14.2	13.3	25.5	15.4	15.1	24.9	0.0	14.3	24.0	0.0	13.0
Incr Delay (d2), s/veh	5.7	0.2	0.0	12.2	0.1	0.1	5.2	0.0	0.5	5.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	0.2	0.1	0.6	0.2	0.4	0.0	2.1	1.2	0.0	1.7
LnGrp Delay(d),s/veh	29.8	14.4	13.4	37.7	15.5	15.2	30.1	0.0	14.8	29.0	0.0	13.4
LnGrp LOS	C	B	B	D	B	B	C		B	C		B
Approach Vol, veh/h		333			139			208			235	
Approach Delay, s/veh		17.7			16.5			16.8			18.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	19.6	5.7	21.2	7.2	17.4	7.4	19.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	2.3	4.8	2.8	5.7	4.1	3.3	4.3	6.0
Green Ext Time (p_c), s	0.0	2.1	0.0	1.1	0.1	0.9	0.1	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	66	62	105	48	17	56	573	117	19	540	91
Future Volume (veh/h)	151	66	62	105	48	17	56	573	117	19	540	91
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	222	97	16	154	71	4	82	843	68	28	794	44
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	515	317	458	492	304	253	405	1718	533	107	1388	429
Arrive On Green	0.15	0.17	0.17	0.14	0.16	0.16	0.12	0.34	0.34	0.06	0.28	0.28
Sat Flow, veh/h	3408	1845	2670	3408	1845	1535	3408	5036	1561	1757	5036	1557
Grp Volume(v), veh/h	222	97	16	154	71	4	82	843	68	28	794	44
Grp Sat Flow(s),veh/h/ln	1704	1845	1335	1704	1845	1535	1704	1679	1561	1757	1679	1557
Q Serve(g_s), s	3.8	3.0	0.3	2.6	2.2	0.1	1.4	8.6	1.9	1.0	8.8	1.4
Cycle Q Clear(g_c), s	3.8	3.0	0.3	2.6	2.2	0.1	1.4	8.6	1.9	1.0	8.8	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	317	458	492	304	253	405	1718	533	107	1388	429
V/C Ratio(X)	0.43	0.31	0.03	0.31	0.23	0.02	0.20	0.49	0.13	0.26	0.57	0.10
Avail Cap(c_a), veh/h	1050	852	1233	1050	852	709	1050	2326	721	541	2249	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	23.5	22.4	24.9	23.6	22.7	25.8	16.9	14.7	29.1	20.2	17.5
Incr Delay (d2), s/veh	0.2	0.8	0.0	0.1	0.6	0.0	0.1	0.3	0.2	0.5	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.6	0.1	1.2	1.2	0.1	0.7	4.0	0.8	0.5	4.1	0.6
LnGrp Delay(d),s/veh	25.2	24.3	22.5	25.0	24.1	22.7	25.9	17.2	14.9	29.6	20.8	17.7
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		335			229			993			866	
Approach Delay, s/veh		24.8			24.7			17.8			20.9	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	16.1	12.2	23.2	13.8	15.7	8.0	27.5
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	4.6	5.0	3.4	10.8	5.8	4.2	3.0	10.6
Green Ext Time (p_c), s	0.2	0.7	0.1	6.7	0.3	0.4	0.0	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	216	15	17	212	6	22	2	27	2	1	16
Future Volume (veh/h)	22	216	15	17	212	6	22	2	27	2	1	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	33	327	12	26	321	4	33	3	5	3	2	1
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	56	603	496	45	592	499	56	43	72	6	48	24
Arrive On Green	0.03	0.33	0.33	0.03	0.32	0.32	0.03	0.07	0.07	0.00	0.04	0.04
Sat Flow, veh/h	1757	1845	1516	1757	1845	1556	1757	616	1027	1757	1156	578
Grp Volume(v), veh/h	33	327	12	26	321	4	33	0	8	3	0	3
Grp Sat Flow(s),veh/h/ln	1757	1845	1516	1757	1845	1556	1757	0	1644	1757	0	1734
Q Serve(g_s), s	0.6	4.7	0.2	0.5	4.6	0.1	0.6	0.0	0.1	0.1	0.0	0.1
Cycle Q Clear(g_c), s	0.6	4.7	0.2	0.5	4.6	0.1	0.6	0.0	0.1	0.1	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.63	1.00		0.33
Lane Grp Cap(c), veh/h	56	603	496	45	592	499	56	0	115	6	0	72
V/C Ratio(X)	0.59	0.54	0.02	0.57	0.54	0.01	0.59	0.00	0.07	0.52	0.00	0.04
Avail Cap(c_a), veh/h	1308	2289	1882	1308	2289	1931	1308	0	1377	1308	0	1507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	8.9	7.4	15.5	9.0	7.4	15.4	0.0	14.0	16.0	0.0	14.8
Incr Delay (d2), s/veh	3.7	1.1	0.0	4.2	1.1	0.0	3.7	0.0	0.1	24.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.5	0.1	0.3	2.5	0.0	0.3	0.0	0.1	0.1	0.0	0.0
LnGrp Delay(d),s/veh	19.1	10.0	7.4	19.7	10.1	7.5	19.1	0.0	14.1	40.3	0.0	14.9
LnGrp LOS	B	A	A	B	B	A	B		B	D		B
Approach Vol, veh/h		372			351			41			6	
Approach Delay, s/veh		10.7			10.8			18.1			27.6	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	15.5	5.5	5.8	5.5	15.3	4.6	6.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	2.5	6.7	2.6	2.1	2.6	6.6	2.1	2.1
Green Ext Time (p_c), s	0.0	3.0	0.0	0.0	0.0	2.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	4	46	27	5	59
Future Vol, veh/h	24	4	46	27	5	59
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	37	6	71	42	8	91
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.7	7.5	7.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	86%	8%
Vol Thru, %	63%	0%	92%
Vol Right, %	37%	14%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	73	28	64
LT Vol	0	24	5
Through Vol	46	0	59
RT Vol	27	4	0
Lane Flow Rate	112	43	98
Geometry Grp	1	1	1
Degree of Util (X)	0.121	0.053	0.113
Departure Headway (Hd)	3.878	4.398	4.127
Convergence, Y/N	Yes	Yes	Yes
Cap	918	803	864
Service Time	1.93	2.485	2.175
HCM Lane V/C Ratio	0.122	0.054	0.113
HCM Control Delay	7.5	7.7	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.2	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	130	70	270	210	30	30	520	70	50	1250	140
Future Volume (veh/h)	120	130	70	270	210	30	30	520	70	50	1250	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	151	16	314	244	32	35	605	41	58	1453	105
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	310	257	338	277	36	76	1898	832	92	1930	838
Arrive On Green	0.09	0.17	0.17	0.10	0.17	0.17	0.04	0.54	0.54	0.05	0.55	0.55
Sat Flow, veh/h	1757	1845	1533	3408	1595	209	1757	3505	1536	1757	3505	1522
Grp Volume(v), veh/h	140	151	16	314	0	276	35	605	41	58	1453	105
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1704	0	1804	1757	1752	1536	1757	1752	1522
Q Serve(g_s), s	10.7	10.1	1.2	12.4	0.0	20.3	2.6	13.0	1.7	4.4	43.3	4.5
Cycle Q Clear(g_c), s	10.7	10.1	1.2	12.4	0.0	20.3	2.6	13.0	1.7	4.4	43.3	4.5
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	310	257	338	0	313	76	1898	832	92	1930	838
V/C Ratio(X)	0.85	0.49	0.06	0.93	0.00	0.88	0.46	0.32	0.05	0.63	0.75	0.13
Avail Cap(c_a), veh/h	252	521	433	338	0	509	252	1898	832	252	1930	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.00	0.59	0.94	0.94	0.94	0.11	0.11	0.11
Uniform Delay (d), s/veh	60.7	51.3	47.6	60.8	0.0	54.8	63.5	17.3	14.7	63.2	23.4	14.7
Incr Delay (d2), s/veh	13.2	0.9	0.1	21.4	0.0	5.3	3.0	0.4	0.1	0.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	5.2	0.5	6.9	0.0	10.6	1.3	6.4	0.7	2.2	20.9	1.9
LnGrp Delay(d),s/veh	73.9	52.2	47.7	82.2	0.0	60.2	66.6	17.7	14.8	63.7	23.7	14.8
LnGrp LOS	E	D	D	F		E	E	B	B	E	C	B
Approach Vol, veh/h		307			590			681			1616	
Approach Delay, s/veh		61.9			71.9			20.0			24.6	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.4	10.4	80.2	17.2	28.2	11.6	79.0
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	13.5	38.4	19.5	39.7	19.5	38.4	19.5	* 38
Max Q Clear Time (g_c+I1), s	14.4	12.1	4.6	45.3	12.7	22.3	6.4	15.0
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.1	1.1	0.1	3.5

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	140	10	20	400	30	20	60	20	40	100	100
Future Volume (veh/h)	80	140	10	20	400	30	20	60	20	40	100	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	189	13	27	541	17	27	81	18	54	135	107
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	752	52	43	715	594	43	238	53	71	173	137
Arrive On Green	0.08	0.44	0.44	0.02	0.39	0.39	0.02	0.17	0.17	0.04	0.18	0.18
Sat Flow, veh/h	1757	1703	117	1757	1845	1531	1757	1443	321	1757	955	757
Grp Volume(v), veh/h	108	0	202	27	541	17	27	0	99	54	0	242
Grp Sat Flow(s),veh/h/ln	1757	0	1820	1757	1845	1531	1757	0	1764	1757	0	1711
Q Serve(g_s), s	3.4	0.0	3.9	0.9	14.3	0.4	0.9	0.0	2.8	1.7	0.0	7.6
Cycle Q Clear(g_c), s	3.4	0.0	3.9	0.9	14.3	0.4	0.9	0.0	2.8	1.7	0.0	7.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.18	1.00		0.44
Lane Grp Cap(c), veh/h	138	0	804	43	715	594	43	0	291	71	0	310
V/C Ratio(X)	0.78	0.00	0.25	0.63	0.76	0.03	0.63	0.00	0.34	0.76	0.00	0.78
Avail Cap(c_a), veh/h	327	0	1518	748	1538	1277	234	0	1033	234	0	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	9.9	27.2	14.9	10.7	27.2	0.0	20.8	26.8	0.0	22.0
Incr Delay (d2), s/veh	3.7	0.0	0.2	5.5	2.4	0.0	5.5	0.0	0.3	6.0	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.0	0.5	7.7	0.2	0.5	0.0	1.4	0.9	0.0	3.7
LnGrp Delay(d),s/veh	29.2	0.0	10.1	32.7	17.3	10.7	32.7	0.0	21.1	32.8	0.0	23.6
LnGrp LOS	C		B	C	B	B	C		C	C		C
Approach Vol, veh/h		310			585			126			296	
Approach Delay, s/veh		16.8			17.8			23.6			25.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	29.9	5.9	14.7	8.9	26.9	6.8	13.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.9	5.9	2.9	9.6	5.4	16.3	3.7	4.8
Green Ext Time (p_c), s	0.0	1.8	0.0	0.8	0.0	5.5	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	180	0	10	320	20	0	0	0	30	0	110
Future Volume (veh/h)	50	180	0	10	320	20	0	0	0	30	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	68	243	0	14	432	13	0	0	0	41	0	27
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	100	783	666	26	705	593	0	213	0	422	0	173
Arrive On Green	0.06	0.42	0.00	0.01	0.38	0.38	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	1757	1845	1568	1757	1845	1550	0	1845	0	1666	0	1494
Grp Volume(v), veh/h	68	243	0	14	432	13	0	0	0	41	0	27
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1550	0	1845	0	1666	0	1494
Q Serve(g_s), s	1.2	2.7	0.0	0.2	5.9	0.2	0.0	0.0	0.0	0.7	0.0	0.5
Cycle Q Clear(g_c), s	1.2	2.7	0.0	0.2	5.9	0.2	0.0	0.0	0.0	0.7	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	783	666	26	705	593	0	213	0	422	0	173
V/C Ratio(X)	0.68	0.31	0.00	0.54	0.61	0.02	0.00	0.00	0.00	0.10	0.00	0.16
Avail Cap(c_a), veh/h	1117	1759	1495	1117	1759	1477	0	1173	0	1288	0	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	6.0	0.0	15.4	7.8	6.1	0.0	0.0	0.0	12.6	0.0	12.5
Incr Delay (d2), s/veh	3.0	0.3	0.0	6.5	1.2	0.0	0.0	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	0.0	0.2	3.2	0.1	0.0	0.0	0.0	0.3	0.0	0.2
LnGrp Delay(d),s/veh	17.6	6.3	0.0	21.9	9.1	6.1	0.0	0.0	0.0	12.8	0.0	13.1
LnGrp LOS	B	A		C	A	A				B		B
Approach Vol, veh/h		311			459			0			68	
Approach Delay, s/veh		8.8			9.4			0.0			12.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	18.4		8.1	6.3	17.0		8.1
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	2.2	4.7		2.7	3.2	7.9		0.0
Green Ext Time (p_c), s	0.0	1.9		0.3	0.1	3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	130	50	90	300	30	40	80	50	20	70	50
Future Volume (veh/h)	40	130	50	90	300	30	40	80	50	20	70	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.95	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	58	188	21	130	435	14	58	116	55	29	101	52
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	526	437	168	570	464	75	315	149	46	278	143
Arrive On Green	0.07	0.28	0.28	0.10	0.31	0.31	0.04	0.27	0.27	0.03	0.25	0.25
Sat Flow, veh/h	1757	1845	1532	1757	1845	1501	1757	1164	552	1757	1095	564
Grp Volume(v), veh/h	58	188	21	130	435	14	58	0	171	29	0	153
Grp Sat Flow(s),veh/h/ln	1757	1845	1532	1757	1845	1501	1757	0	1716	1757	0	1659
Q Serve(g_s), s	1.8	4.5	0.6	4.0	11.9	0.4	1.8	0.0	4.5	0.9	0.0	4.2
Cycle Q Clear(g_c), s	1.8	4.5	0.6	4.0	11.9	0.4	1.8	0.0	4.5	0.9	0.0	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.34
Lane Grp Cap(c), veh/h	126	526	437	168	570	464	75	0	464	46	0	421
V/C Ratio(X)	0.46	0.36	0.05	0.77	0.76	0.03	0.78	0.00	0.37	0.64	0.00	0.36
Avail Cap(c_a), veh/h	631	994	825	631	994	809	631	0	740	631	0	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.8	15.9	14.4	24.6	17.4	13.4	26.4	0.0	16.5	26.9	0.0	17.1
Incr Delay (d2), s/veh	1.0	0.6	0.1	2.9	3.0	0.0	6.3	0.0	0.5	5.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	0.2	2.1	6.5	0.2	1.0	0.0	2.2	0.5	0.0	2.0
LnGrp Delay(d),s/veh	25.8	16.4	14.5	27.4	20.4	13.5	32.7	0.0	17.0	32.2	0.0	17.6
LnGrp LOS	C	B	B	C	C	B	C		B	C		B
Approach Vol, veh/h		267			579			229			182	
Approach Delay, s/veh		18.3			21.9			20.9			19.9	
Approach LOS		B			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	20.9	6.4	18.6	8.5	22.2	5.4	19.5
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	13.9	6.5	3.8	6.2	3.8	13.9	2.9	6.5
Green Ext Time (p_c), s	0.1	1.5	0.0	0.8	0.0	3.3	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	290	190	650	760	60	690	480	550	40	1350	170
Future Volume (veh/h)	80	290	190	650	760	60	690	480	550	40	1350	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	85	309	172	691	809	60	734	511	228	43	1436	80
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	364	796	1077	781	918	68	824	1305	584	310	1884	799
Arrive On Green	0.11	0.23	0.23	0.16	0.28	0.28	0.17	0.37	0.37	0.09	0.30	0.30
Sat Flow, veh/h	3408	3505	2721	4954	3303	245	4954	3505	1568	3408	6346	2689
Grp Volume(v), veh/h	85	309	172	691	429	440	734	511	228	43	1436	80
Grp Sat Flow(s),veh/h/ln	1704	1752	1361	1651	1752	1795	1651	1752	1568	1704	1586	1344
Q Serve(g_s), s	3.3	10.8	5.9	19.8	33.9	33.9	21.0	15.5	15.5	1.7	29.8	3.1
Cycle Q Clear(g_c), s	3.3	10.8	5.9	19.8	33.9	33.9	21.0	15.5	15.5	1.7	29.8	3.1
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	796	1077	781	487	499	824	1305	584	310	1884	799
V/C Ratio(X)	0.23	0.39	0.16	0.88	0.88	0.88	0.89	0.39	0.39	0.14	0.76	0.10
Avail Cap(c_a), veh/h	706	1113	1323	1026	556	570	1026	1305	584	706	2015	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	47.4	28.4	59.7	50.0	50.0	59.1	33.4	33.4	60.6	46.3	36.9
Incr Delay (d2), s/veh	0.1	0.3	0.1	6.3	13.9	13.7	7.4	0.3	0.6	0.1	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.3	2.2	9.5	18.3	18.8	10.1	7.6	6.8	0.8	13.3	1.2
LnGrp Delay(d),s/veh	59.4	47.8	28.5	66.0	63.9	63.7	66.5	33.7	34.0	60.7	48.1	37.0
LnGrp LOS	E	D	C	E	E	E	E	C	C	E	D	D
Approach Vol, veh/h		566			1560			1473			1559	
Approach Delay, s/veh		43.7			64.8			50.1			47.9	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	38.9	29.1	49.0	20.5	46.3	18.2	60.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	21.8	12.8	23.0	31.8	5.3	35.9	3.7	17.5
Green Ext Time (p_c), s	1.1	2.6	1.1	10.3	0.1	3.6	0.1	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	790	40	10	1310	30	30	10	10	30	10	120
Future Volume (veh/h)	40	790	40	10	1310	30	30	10	10	30	10	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	898	42	11	1489	19	34	11	1	34	11	17
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	64	2893	135	20	1971	862	52	42	4	52	17	26
Arrive On Green	0.04	0.59	0.59	0.01	0.56	0.56	0.03	0.03	0.03	0.03	0.03	0.03
Sat Flow, veh/h	1757	4926	230	1757	3505	1533	1757	1666	151	1757	655	1012
Grp Volume(v), veh/h	45	611	329	11	1489	19	34	0	12	34	0	28
Grp Sat Flow(s),veh/h/ln	1757	1679	1798	1757	1752	1533	1757	0	1817	1757	0	1666
Q Serve(g_s), s	1.4	5.0	5.0	0.3	17.6	0.3	1.0	0.0	0.4	1.0	0.0	0.9
Cycle Q Clear(g_c), s	1.4	5.0	5.0	0.3	17.6	0.3	1.0	0.0	0.4	1.0	0.0	0.9
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.08	1.00		0.61
Lane Grp Cap(c), veh/h	64	1972	1056	20	1971	862	52	0	46	52	0	42
V/C Ratio(X)	0.71	0.31	0.31	0.56	0.76	0.02	0.66	0.00	0.26	0.66	0.00	0.66
Avail Cap(c_a), veh/h	773	2154	1154	773	2249	984	644	0	666	644	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	5.7	5.7	26.8	9.1	5.3	26.2	0.0	26.1	26.2	0.0	26.4
Incr Delay (d2), s/veh	5.3	0.1	0.2	8.8	1.5	0.0	5.1	0.0	1.1	5.1	0.0	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	2.5	0.2	8.7	0.1	0.6	0.0	0.2	0.6	0.0	0.5
LnGrp Delay(d),s/veh	31.3	5.8	5.9	35.6	10.6	5.3	31.3	0.0	27.2	31.3	0.0	32.8
LnGrp LOS	C	A	A	D	B	A	C		C	C		C
Approach Vol, veh/h		985			1519			46			62	
Approach Delay, s/veh		7.0			10.7			30.2			32.0	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	37.3	6.1	6.0	6.5	36.0	6.1	6.0
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.3	7.0	3.0	2.9	3.4	19.6	3.0	2.4
Green Ext Time (p_c), s	0.0	8.9	0.0	0.0	0.0	11.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	740	20	60	1240	0	40	0	20	10	0	10
Future Volume (veh/h)	10	740	20	60	1240	0	40	0	20	10	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	841	13	68	1409	0	45	0	3	11	0	1
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	2215	673	111	2462	766	162	132	111	25	0	59
Arrive On Green	0.01	0.44	0.44	0.06	0.49	0.00	0.05	0.00	0.07	0.01	0.00	0.04
Sat Flow, veh/h	1757	5036	1529	1757	5036	1568	3408	1845	1555	1757	0	1551
Grp Volume(v), veh/h	11	841	13	68	1409	0	45	0	3	11	0	1
Grp Sat Flow(s),veh/h/ln	1757	1679	1529	1757	1679	1568	1704	1845	1555	1757	0	1551
Q Serve(g_s), s	0.3	5.2	0.2	1.7	9.1	0.0	0.6	0.0	0.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.3	5.2	0.2	1.7	9.1	0.0	0.6	0.0	0.1	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	2215	673	111	2462	766	162	132	111	25	0	59
V/C Ratio(X)	0.44	0.38	0.02	0.61	0.57	0.00	0.28	0.00	0.03	0.44	0.00	0.02
Avail Cap(c_a), veh/h	764	3177	965	764	3177	989	1705	963	812	764	0	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.5	8.7	7.3	21.0	8.3	0.0	21.1	0.0	19.9	22.5	0.0	21.3
Incr Delay (d2), s/veh	4.4	0.2	0.0	2.0	0.3	0.0	0.3	0.0	0.0	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	0.1	0.9	4.2	0.0	0.3	0.0	0.0	0.2	0.0	0.0
LnGrp Delay(d),s/veh	26.9	8.8	7.3	23.0	8.6	0.0	21.5	0.0	19.9	26.9	0.0	21.3
LnGrp LOS	C	A	A	C	A		C		B	C		C
Approach Vol, veh/h		865			1477			48			12	
Approach Delay, s/veh		9.0			9.3			21.4			26.5	
Approach LOS		A			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	25.5	6.7	6.4	5.2	27.8	5.2	7.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.7	7.2	2.6	2.0	2.3	11.1	2.3	2.1
Green Ext Time (p_c), s	0.1	7.6	0.0	0.0	0.0	11.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	200	110	10	730	20	30	0	10	40	10	300
Future Volume (veh/h)	80	200	110	10	730	20	30	0	10	40	10	300
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	92	230	56	11	839	8	34	0	3	46	11	84
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	460	2118	648	96	1580	479	154	0	501	96	32	247
Arrive On Green	0.13	0.42	0.42	0.03	0.31	0.31	0.04	0.00	0.17	0.05	0.18	0.18
Sat Flow, veh/h	3408	5036	1540	3408	5036	1528	3514	0	3032	1757	184	1404
Grp Volume(v), veh/h	92	230	56	11	839	8	34	0	3	46	0	95
Grp Sat Flow(s),veh/h/ln	1704	1679	1540	1704	1679	1528	1757	0	1516	1757	0	1588
Q Serve(g_s), s	1.4	1.6	1.2	0.2	7.8	0.2	0.5	0.0	0.0	1.4	0.0	3.0
Cycle Q Clear(g_c), s	1.4	1.6	1.2	0.2	7.8	0.2	0.5	0.0	0.0	1.4	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.88
Lane Grp Cap(c), veh/h	460	2118	648	96	1580	479	154	0	501	96	0	279
V/C Ratio(X)	0.20	0.11	0.09	0.12	0.53	0.02	0.22	0.00	0.01	0.48	0.00	0.34
Avail Cap(c_a), veh/h	1202	3020	924	1202	3020	916	1240	0	1070	620	0	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	10.0	9.9	26.9	16.0	13.4	26.2	0.0	19.8	26.0	0.0	20.5
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.2	0.4	0.0	0.3	0.0	0.0	1.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	0.5	0.1	3.6	0.1	0.3	0.0	0.0	0.7	0.0	1.4
LnGrp Delay(d),s/veh	21.9	10.0	10.0	27.1	16.4	13.4	26.4	0.0	19.8	27.4	0.0	21.5
LnGrp LOS	C	B	A	C	B	B	C		B	C		C
Approach Vol, veh/h		378			858			37			141	
Approach Delay, s/veh		12.9			16.5			25.9			23.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	29.1	7.0	14.5	12.2	23.1	7.6	13.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	3.6	2.5	5.0	3.4	9.8	3.4	2.0
Green Ext Time (p_c), s	0.0	2.3	0.0	0.5	0.1	7.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	260	0	0	0	450	560	0	0	1370	220
Future Volume (veh/h)	120	0	260	0	0	0	450	560	0	0	1370	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	128	0	86	0	0	0	479	596	0	0	1457	102
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	505	0	443	3	3	0	600	2421	0	3	1533	675
Arrive On Green	0.14	0.00	0.14	0.00	0.00	0.00	0.18	0.69	0.00	0.00	0.44	0.44
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1542
Grp Volume(v), veh/h	128	0	86	0	0	0	479	596	0	0	1457	102
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1542
Q Serve(g_s), s	2.2	0.0	1.7	0.0	0.0	0.0	9.2	4.3	0.0	0.0	27.4	2.7
Cycle Q Clear(g_c), s	2.2	0.0	1.7	0.0	0.0	0.0	9.2	4.3	0.0	0.0	27.4	2.7
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	505	0	443	3	3	0	600	2421	0	3	1533	675
V/C Ratio(X)	0.25	0.00	0.19	0.00	0.00	0.00	0.80	0.25	0.00	0.00	0.95	0.15
Avail Cap(c_a), veh/h	1545	0	1379	308	323	0	1494	2421	0	308	1536	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	26.0	0.0	0.0	0.0	27.0	3.9	0.0	0.0	18.5	11.6
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.0	0.0	0.0	0.9	0.1	0.0	0.0	13.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.7	0.0	0.0	0.0	4.4	2.1	0.0	0.0	16.0	1.2
LnGrp Delay(d),s/veh	26.1	0.0	26.3	0.0	0.0	0.0	28.0	4.0	0.0	0.0	31.7	11.7
LnGrp LOS	C		C				C	A			C	B
Approach Vol, veh/h		214			0			1075			1559	
Approach Delay, s/veh		26.2			0.0			14.7			30.4	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	15.5	17.3	35.6	15.1	0.3	0.0	53.0
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	10.0	3.7	11.2	29.4	4.2	0.0	0.0	6.3
Green Ext Time (p_c), s	0.0	0.4	0.8	0.5	0.2	0.0	0.0	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	190	0	0	0	390	620	0	0	840	120
Future Volume (veh/h)	60	0	190	0	0	0	390	620	0	0	840	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	77	0	23	0	0	0	500	795	0	0	1077	83
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	204	0	180	0	3	0	541	3951	0	0	1423	626
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.00	0.31	0.78	0.00	0.00	0.41	0.41
Sat Flow, veh/h	3514	0	3106	0	1845	0	1757	5202	0	0	3597	1541
Grp Volume(v), veh/h	77	0	23	0	0	0	500	795	0	0	1077	83
Grp Sat Flow(s),veh/h/ln	1757	0	1553	0	1845	0	1757	1679	0	0	1752	1541
Q Serve(g_s), s	1.3	0.0	0.4	0.0	0.0	0.0	17.5	2.6	0.0	0.0	16.7	2.1
Cycle Q Clear(g_c), s	1.3	0.0	0.4	0.0	0.0	0.0	17.5	2.6	0.0	0.0	16.7	2.1
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	204	0	180	0	3	0	541	3951	0	0	1423	626
V/C Ratio(X)	0.38	0.00	0.13	0.00	0.00	0.00	0.92	0.20	0.00	0.00	0.76	0.13
Avail Cap(c_a), veh/h	1327	0	1173	0	900	0	553	3951	0	0	1655	727
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	28.4	0.0	0.0	0.0	21.3	1.7	0.0	0.0	16.2	11.8
Incr Delay (d2), s/veh	1.6	0.0	0.5	0.0	0.0	0.0	20.8	0.0	0.0	0.0	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2	0.0	0.0	0.0	11.6	1.2	0.0	0.0	8.5	0.9
LnGrp Delay(d),s/veh	30.5	0.0	28.9	0.0	0.0	0.0	42.1	1.8	0.0	0.0	18.2	12.0
LnGrp LOS	C		C				D	A			B	B
Approach Vol, veh/h		100			0			1295			1160	
Approach Delay, s/veh		30.1			0.0			17.4			17.7	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		8.7	24.1	30.8		0.0		54.9
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		3.3	19.5	18.7		0.0		4.6
Green Ext Time (p_c), s		0.4	0.1	6.8		0.0		7.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	170	50	170	420	60	110	440	100	70	1220	390
Future Volume (veh/h)	100	170	50	170	420	60	110	440	100	70	1220	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	118	200	18	200	494	67	129	518	44	82	1435	315
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	169	554	459	257	516	70	181	1463	637	103	1482	647
Arrive On Green	0.05	0.30	0.30	0.08	0.33	0.33	0.05	0.42	0.42	0.06	0.42	0.42
Sat Flow, veh/h	3408	1845	1529	3408	1585	215	3408	3505	1526	1757	3505	1530
Grp Volume(v), veh/h	118	200	18	200	0	561	129	518	44	82	1435	315
Grp Sat Flow(s),veh/h/ln	1704	1845	1529	1704	0	1800	1704	1752	1526	1757	1752	1530
Q Serve(g_s), s	4.4	11.1	1.1	7.5	0.0	39.7	4.8	13.1	2.2	6.0	52.0	19.5
Cycle Q Clear(g_c), s	4.4	11.1	1.1	7.5	0.0	39.7	4.8	13.1	2.2	6.0	52.0	19.5
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	554	459	257	0	586	181	1463	637	103	1482	647
V/C Ratio(X)	0.70	0.36	0.04	0.78	0.00	0.96	0.71	0.35	0.07	0.79	0.97	0.49
Avail Cap(c_a), veh/h	354	554	459	485	0	595	354	1463	637	209	1482	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.00	0.63	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	35.7	32.2	59.0	0.0	42.9	60.6	25.9	22.7	60.4	36.6	27.3
Incr Delay (d2), s/veh	3.8	0.7	0.1	2.4	0.0	19.7	3.5	0.6	0.2	9.8	16.9	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	0.5	3.6	0.0	22.8	2.4	6.5	1.0	3.2	28.6	8.7
LnGrp Delay(d),s/veh	64.6	36.4	32.3	61.5	0.0	62.7	64.1	26.5	22.9	70.2	53.5	29.9
LnGrp LOS	E	D	C	E		E	E	C	C	E	D	C
Approach Vol, veh/h		336			761			691			1832	
Approach Delay, s/veh		46.1			62.3			33.3			50.2	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	44.0	11.4	60.3	11.0	47.3	12.1	59.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	18.5	38.0	13.5	40.7	13.5	43.0	15.5	38.7
Max Q Clear Time (g_c+I1), s	9.5	13.1	6.8	54.0	6.4	41.7	8.0	15.1
Green Ext Time (p_c), s	0.3	1.8	0.1	0.0	0.1	0.6	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	49.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	130	10	20	290	80	20	140	10	60	140	250
Future Volume (veh/h)	190	130	10	20	290	80	20	140	10	60	140	250
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	317	217	15	33	483	58	33	233	15	100	233	104
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	356	818	57	46	561	462	46	324	21	129	437	372
Arrive On Green	0.20	0.48	0.48	0.03	0.30	0.30	0.03	0.19	0.19	0.07	0.24	0.24
Sat Flow, veh/h	1757	1702	118	1757	1845	1520	1757	1707	110	1757	1845	1568
Grp Volume(v), veh/h	317	0	232	33	483	58	33	0	248	100	233	104
Grp Sat Flow(s),veh/h/ln	1757	0	1820	1757	1845	1520	1757	0	1817	1757	1845	1568
Q Serve(g_s), s	14.1	0.0	6.1	1.5	19.8	2.2	1.5	0.0	10.3	4.5	8.9	4.4
Cycle Q Clear(g_c), s	14.1	0.0	6.1	1.5	19.8	2.2	1.5	0.0	10.3	4.5	8.9	4.4
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	875	46	561	462	46	0	345	129	437	372
V/C Ratio(X)	0.89	0.00	0.27	0.72	0.86	0.13	0.72	0.00	0.72	0.78	0.53	0.28
Avail Cap(c_a), veh/h	437	0	875	437	689	567	437	0	452	437	459	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	12.4	38.8	26.4	20.2	38.8	0.0	30.5	36.6	26.8	25.0
Incr Delay (d2), s/veh	15.4	0.0	0.2	7.8	10.1	0.2	7.8	0.0	4.8	3.8	1.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	3.1	0.8	11.6	1.0	0.8	0.0	5.6	2.3	4.7	1.9
LnGrp Delay(d),s/veh	46.6	0.0	12.6	46.7	36.4	20.4	46.7	0.0	35.3	40.4	28.2	25.6
LnGrp LOS	D		B	D	D	C	D		D	D	C	C
Approach Vol, veh/h		549			574			281			437	
Approach Delay, s/veh		32.2			35.4			36.7			30.4	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	43.6	6.6	23.6	20.8	29.4	10.4	19.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.5	8.1	3.5	10.9	16.1	21.8	6.5	12.3
Green Ext Time (p_c), s	0.0	1.7	0.0	1.6	0.2	2.6	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	130	40	30	230	100	50	60	40	90	50	110
Future Volume (veh/h)	30	130	40	30	230	100	50	60	40	90	50	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	197	16	45	348	38	76	91	41	136	76	106
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	63	810	357	63	810	348	97	360	162	176	232	323
Arrive On Green	0.04	0.23	0.23	0.04	0.23	0.23	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1757	3505	1544	1757	3505	1505	1757	1170	527	1757	657	916
Grp Volume(v), veh/h	45	197	16	45	348	38	76	0	132	136	0	182
Grp Sat Flow(s),veh/h/ln	1757	1752	1544	1757	1752	1505	1757	0	1698	1757	0	1573
Q Serve(g_s), s	1.4	2.6	0.5	1.4	4.8	1.1	2.4	0.0	3.3	4.3	0.0	4.8
Cycle Q Clear(g_c), s	1.4	2.6	0.5	1.4	4.8	1.1	2.4	0.0	3.3	4.3	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.58
Lane Grp Cap(c), veh/h	63	810	357	63	810	348	97	0	523	176	0	555
V/C Ratio(X)	0.72	0.24	0.04	0.72	0.43	0.11	0.78	0.00	0.25	0.77	0.00	0.33
Avail Cap(c_a), veh/h	618	1849	815	618	1849	794	618	0	717	618	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	17.8	17.0	27.1	18.7	17.2	26.5	0.0	14.8	25.0	0.0	13.5
Incr Delay (d2), s/veh	5.5	0.2	0.1	5.5	0.5	0.2	5.1	0.0	0.4	2.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.3	0.2	0.8	2.4	0.5	1.3	0.0	1.6	2.2	0.0	2.1
LnGrp Delay(d),s/veh	32.7	18.0	17.1	32.7	19.2	17.4	31.6	0.0	15.1	27.7	0.0	14.0
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		258			431			208			318	
Approach Delay, s/veh		20.5			20.4			21.1			19.8	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	18.1	7.6	24.5	6.5	18.1	10.2	22.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.4	4.6	4.4	6.8	3.4	6.8	6.3	5.3
Green Ext Time (p_c), s	0.0	1.7	0.1	1.4	0.0	3.1	0.1	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	190	120	300	240	120	150	690	100	110	1120	160
Future Volume (veh/h)	50	190	120	300	240	120	150	690	100	110	1120	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	61	232	47	366	293	59	183	841	32	134	1366	83
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	287	490	595	445	575	485	356	1556	481	180	1518	459
Arrive On Green	0.08	0.27	0.27	0.13	0.31	0.31	0.10	0.31	0.31	0.10	0.30	0.30
Sat Flow, veh/h	3408	1845	2240	3408	1845	1554	3408	5036	1558	1757	5036	1522
Grp Volume(v), veh/h	61	232	47	366	293	59	183	841	32	134	1366	83
Grp Sat Flow(s),veh/h/ln	1704	1845	1120	1704	1845	1554	1704	1679	1558	1757	1679	1522
Q Serve(g_s), s	1.6	10.0	1.5	9.9	12.3	2.6	4.8	13.2	1.4	7.0	24.7	3.8
Cycle Q Clear(g_c), s	1.6	10.0	1.5	9.9	12.3	2.6	4.8	13.2	1.4	7.0	24.7	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	490	595	445	575	485	356	1556	481	180	1518	459
V/C Ratio(X)	0.21	0.47	0.08	0.82	0.51	0.12	0.51	0.54	0.07	0.75	0.90	0.18
Avail Cap(c_a), veh/h	718	583	707	718	583	491	718	1590	492	370	1537	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	29.3	26.2	40.2	26.7	23.4	40.3	27.2	23.2	41.4	31.8	24.5
Incr Delay (d2), s/veh	0.1	1.0	0.1	1.8	1.0	0.2	0.4	0.5	0.1	2.3	7.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.2	0.5	4.8	6.4	1.1	2.3	6.1	0.6	3.5	12.5	1.6
LnGrp Delay(d),s/veh	40.7	30.3	26.3	42.0	27.7	23.5	40.7	27.7	23.2	43.8	39.5	24.8
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	C
Approach Vol, veh/h		340			718			1056			1583	
Approach Delay, s/veh		31.6			34.7			29.8			39.1	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	30.2	14.4	33.9	12.0	34.6	13.7	34.7
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	11.9	12.0	6.8	26.7	3.6	14.3	9.0	15.2
Green Ext Time (p_c), s	0.5	1.9	0.2	1.9	0.1	2.3	0.1	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	170	10	40	380	10	10	10	50	10	10	60
Future Volume (veh/h)	20	170	10	40	380	10	10	10	50	10	10	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	215	5	51	481	7	13	13	9	13	13	9
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	43	685	564	77	721	594	24	91	63	24	90	62
Arrive On Green	0.02	0.37	0.37	0.04	0.39	0.39	0.01	0.09	0.09	0.01	0.09	0.09
Sat Flow, veh/h	1757	1845	1519	1757	1845	1519	1757	1004	695	1757	992	687
Grp Volume(v), veh/h	25	215	5	51	481	7	13	0	22	13	0	22
Grp Sat Flow(s),veh/h/ln	1757	1845	1519	1757	1845	1519	1757	0	1698	1757	0	1678
Q Serve(g_s), s	0.5	3.2	0.1	1.1	8.3	0.1	0.3	0.0	0.5	0.3	0.0	0.5
Cycle Q Clear(g_c), s	0.5	3.2	0.1	1.1	8.3	0.1	0.3	0.0	0.5	0.3	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.41
Lane Grp Cap(c), veh/h	43	685	564	77	721	594	24	0	154	24	0	152
V/C Ratio(X)	0.58	0.31	0.01	0.66	0.67	0.01	0.55	0.00	0.14	0.55	0.00	0.14
Avail Cap(c_a), veh/h	1096	1918	1579	1096	1918	1580	1096	0	1192	1096	0	1222
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	8.6	7.6	18.1	9.7	7.2	18.9	0.0	16.1	18.9	0.0	16.1
Incr Delay (d2), s/veh	4.6	0.4	0.0	3.6	1.5	0.0	7.2	0.0	0.2	7.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	0.0	0.6	4.4	0.0	0.2	0.0	0.2	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.2	9.0	7.6	21.8	11.2	7.2	26.0	0.0	16.3	26.0	0.0	16.3
LnGrp LOS	C	A	A	C	B	A	C		B	C		B
Approach Vol, veh/h		245			539			35			35	
Approach Delay, s/veh		10.4			12.1			19.9			19.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	19.3	5.0	8.0	5.4	20.0	5.0	8.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	3.1	5.2	2.3	2.5	2.5	10.3	2.3	2.5
Green Ext Time (p_c), s	0.0	1.8	0.0	0.0	0.0	4.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	20	60	20	20	130
Future Vol, veh/h	40	20	60	20	20	130
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	53	26	79	26	26	171
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.1	7.8	8.6
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	67%	13%
Vol Thru, %	75%	0%	87%
Vol Right, %	25%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	60	150
LT Vol	0	40	20
Through Vol	60	0	130
RT Vol	20	20	0
Lane Flow Rate	105	79	197
Geometry Grp	1	1	1
Degree of Util (X)	0.123	0.1	0.23
Departure Headway (Hd)	4.191	4.549	4.197
Convergence, Y/N	Yes	Yes	Yes
Cap	859	792	843
Service Time	2.199	2.554	2.283
HCM Lane V/C Ratio	0.122	0.1	0.234
HCM Control Delay	7.8	8.1	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.3	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	100	70	110	100	60	40	790	110	20	690	30
Future Volume (veh/h)	40	100	70	110	100	60	40	790	110	20	690	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	56	141	17	155	141	62	56	1113	93	28	972	22
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	239	201	215	168	74	96	2165	949	70	2113	938
Arrive On Green	0.05	0.13	0.13	0.06	0.14	0.14	0.05	0.62	0.62	0.04	0.60	0.60
Sat Flow, veh/h	1757	1845	1550	3408	1215	534	1757	3505	1536	1757	3505	1556
Grp Volume(v), veh/h	56	141	17	155	0	203	56	1113	93	28	972	22
Grp Sat Flow(s),veh/h/ln	1757	1845	1550	1704	0	1749	1757	1752	1536	1757	1752	1556
Q Serve(g_s), s	3.9	9.1	1.2	5.6	0.0	14.3	3.9	22.4	3.1	2.0	19.2	0.7
Cycle Q Clear(g_c), s	3.9	9.1	1.2	5.6	0.0	14.3	3.9	22.4	3.1	2.0	19.2	0.7
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	239	201	215	0	242	96	2165	949	70	2113	938
V/C Ratio(X)	0.58	0.59	0.08	0.72	0.00	0.84	0.58	0.51	0.10	0.40	0.46	0.02
Avail Cap(c_a), veh/h	160	562	472	527	0	533	160	2165	949	160	2113	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.00	0.95	0.29	0.29	0.29	0.89	0.89	0.89
Uniform Delay (d), s/veh	58.2	51.7	48.3	57.9	0.0	52.9	58.2	13.5	9.8	59.0	13.8	10.1
Incr Delay (d2), s/veh	4.1	1.7	0.1	3.2	0.0	5.5	1.2	0.3	0.1	2.5	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.7	0.5	2.7	0.0	7.3	1.9	10.9	1.3	1.0	9.4	0.3
LnGrp Delay(d),s/veh	62.3	53.4	48.4	61.1	0.0	58.5	59.4	13.7	9.9	61.5	14.4	10.1
LnGrp LOS	E	D	D	E		E	E	B	A	E	B	B
Approach Vol, veh/h		214			358			1262			1022	
Approach Delay, s/veh		55.4			59.6			15.5			15.6	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	20.9	11.4	81.3	11.4	22.0	9.5	83.1
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	38.4	11.5	31.7	11.5	38.4	11.5	* 38
Max Q Clear Time (g_c+I1), s	7.6	11.1	5.9	21.2	5.9	16.3	4.0	24.4
Green Ext Time (p_c), s	0.3	0.6	0.0	6.0	0.0	0.9	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	190	10	10	210	30	20	30	10	20	40	30
Future Volume (veh/h)	30	190	10	10	210	30	20	30	10	20	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	48	306	14	16	339	22	32	48	6	32	65	25
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	74	614	28	29	599	509	53	162	20	53	129	50
Arrive On Green	0.04	0.35	0.35	0.02	0.32	0.32	0.03	0.10	0.10	0.03	0.10	0.10
Sat Flow, veh/h	1757	1750	80	1757	1845	1566	1757	1595	199	1757	1270	488
Grp Volume(v), veh/h	48	0	320	16	339	22	32	0	54	32	0	90
Grp Sat Flow(s),veh/h/ln	1757	0	1830	1757	1845	1566	1757	0	1794	1757	0	1758
Q Serve(g_s), s	1.0	0.0	5.1	0.3	5.6	0.4	0.7	0.0	1.0	0.7	0.0	1.8
Cycle Q Clear(g_c), s	1.0	0.0	5.1	0.3	5.6	0.4	0.7	0.0	1.0	0.7	0.0	1.8
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.11	1.00		0.28
Lane Grp Cap(c), veh/h	74	0	642	29	599	509	53	0	183	53	0	179
V/C Ratio(X)	0.65	0.00	0.50	0.56	0.57	0.04	0.60	0.00	0.30	0.60	0.00	0.50
Avail Cap(c_a), veh/h	499	0	2329	1142	2347	1992	357	0	1603	357	0	1143
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	9.4	18.0	10.3	8.5	17.7	0.0	15.4	17.7	0.0	15.7
Incr Delay (d2), s/veh	3.5	0.0	0.9	6.1	1.2	0.0	4.0	0.0	0.3	4.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	2.6	0.2	3.0	0.2	0.4	0.0	0.5	0.4	0.0	0.9
LnGrp Delay(d),s/veh	20.9	0.0	10.3	24.1	11.5	8.6	21.7	0.0	15.7	21.7	0.0	16.5
LnGrp LOS	C		B	C	B	A	C		B	C		B
Approach Vol, veh/h		368			377			86			122	
Approach Delay, s/veh		11.7			11.9			17.9			17.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	17.9	5.6	8.3	6.1	17.0	5.6	8.3
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.3	7.1	2.7	3.8	3.0	7.6	2.7	3.0
Green Ext Time (p_c), s	0.0	3.0	0.0	0.3	0.0	3.3	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	150	0	0	220	10	0	0	0	10	0	30
Future Volume (veh/h)	40	150	0	0	220	10	0	0	0	10	0	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	62	231	0	0	338	7	0	0	0	15	0	6
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	97	1112	945	7	700	591	0	80	0	341	0	67
Arrive On Green	0.06	0.60	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.04	0.00	0.04
Sat Flow, veh/h	1757	1845	1568	1757	1845	1558	0	1845	0	1676	0	1547
Grp Volume(v), veh/h	62	231	0	0	338	7	0	0	0	15	0	6
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1558	0	1845	0	1676	0	1547
Q Serve(g_s), s	0.9	1.5	0.0	0.0	3.7	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Cycle Q Clear(g_c), s	0.9	1.5	0.0	0.0	3.7	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	97	1112	945	7	700	591	0	80	0	341	0	67
V/C Ratio(X)	0.64	0.21	0.00	0.00	0.48	0.01	0.00	0.00	0.00	0.04	0.00	0.09
Avail Cap(c_a), veh/h	1310	2063	1753	1310	2063	1742	0	1375	0	1517	0	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.4	2.4	0.0	0.0	6.3	5.2	0.0	0.0	0.0	12.4	0.0	12.3
Incr Delay (d2), s/veh	2.6	0.1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
LnGrp Delay(d),s/veh	15.0	2.6	0.0	0.0	7.1	5.2	0.0	0.0	0.0	12.5	0.0	13.1
LnGrp LOS	B	A			A	A				B		B
Approach Vol, veh/h		293			345			0			21	
Approach Delay, s/veh		5.2			7.0			0.0			12.7	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	21.2		5.7	6.0	15.2		5.7
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	2.0	3.5		2.2	2.9	5.7		0.0
Green Ext Time (p_c), s	0.0	1.8		0.0	0.1	2.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	160	30	60	170	20	30	30	60	10	20	20
Future Volume (veh/h)	30	160	30	60	170	20	30	30	60	10	20	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	242	18	91	258	12	45	45	24	15	30	4
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	174	525	446	115	463	389	69	207	110	27	253	34
Arrive On Green	0.10	0.28	0.28	0.07	0.25	0.25	0.04	0.18	0.18	0.02	0.16	0.16
Sat Flow, veh/h	1757	1845	1568	1757	1845	1552	1757	1129	602	1757	1590	212
Grp Volume(v), veh/h	45	242	18	91	258	12	45	0	69	15	0	34
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1552	1757	0	1731	1757	0	1801
Q Serve(g_s), s	0.9	4.3	0.3	2.0	4.9	0.2	1.0	0.0	1.4	0.3	0.0	0.6
Cycle Q Clear(g_c), s	0.9	4.3	0.3	2.0	4.9	0.2	1.0	0.0	1.4	0.3	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		0.12
Lane Grp Cap(c), veh/h	174	525	446	115	463	389	69	0	317	27	0	287
V/C Ratio(X)	0.26	0.46	0.04	0.79	0.56	0.03	0.65	0.00	0.22	0.56	0.00	0.12
Avail Cap(c_a), veh/h	881	1388	1180	881	1388	1168	881	0	1042	881	0	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	11.7	10.3	18.4	13.0	11.3	18.9	0.0	13.9	19.5	0.0	14.4
Incr Delay (d2), s/veh	0.3	0.9	0.1	4.5	1.5	0.0	3.8	0.0	0.3	6.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	0.1	1.1	2.6	0.1	0.5	0.0	0.7	0.2	0.0	0.3
LnGrp Delay(d),s/veh	16.9	12.7	10.4	22.8	14.5	11.3	22.7	0.0	14.2	26.0	0.0	14.5
LnGrp LOS	B	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		305			361			114			49	
Approach Delay, s/veh		13.1			16.5			17.5			18.0	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	16.3	5.6	10.8	8.5	15.0	4.6	11.8
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.6	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.0	6.3	3.0	2.6	2.9	6.9	2.3	3.4
Green Ext Time (p_c), s	0.1	2.0	0.0	0.1	0.0	2.1	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	660	350	620	580	40	1010	740	600	60	690	130
Future Volume (veh/h)	230	660	350	620	580	40	1010	740	600	60	690	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	319	917	461	861	806	53	1403	1028	501	83	958	39
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	366	979	1283	914	1188	78	920	1064	470	329	1361	589
Arrive On Green	0.11	0.28	0.28	0.18	0.36	0.36	0.19	0.30	0.30	0.10	0.21	0.21
Sat Flow, veh/h	3408	3505	2760	4954	3334	219	4954	3505	1548	3408	6346	2748
Grp Volume(v), veh/h	319	917	461	861	424	435	1403	1028	501	83	958	39
Grp Sat Flow(s),veh/h/ln	1704	1752	1380	1651	1752	1801	1651	1752	1548	1704	1586	1374
Q Serve(g_s), s	14.9	41.3	17.3	27.7	33.2	33.2	30.0	46.7	49.0	3.6	22.6	1.8
Cycle Q Clear(g_c), s	14.9	41.3	17.3	27.7	33.2	33.2	30.0	46.7	49.0	3.6	22.6	1.8
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	979	1283	914	624	642	920	1064	470	329	1361	589
V/C Ratio(X)	0.87	0.94	0.36	0.94	0.68	0.68	1.53	0.97	1.07	0.25	0.70	0.07
Avail Cap(c_a), veh/h	633	998	1298	920	624	642	920	1064	470	633	1806	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	56.8	27.8	65.0	44.2	44.2	65.8	55.5	56.3	67.6	58.7	50.6
Incr Delay (d2), s/veh	2.8	15.4	0.2	17.1	3.0	2.9	242.0	20.0	60.3	0.1	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	22.1	6.7	14.1	16.5	17.0	34.2	25.5	28.8	1.7	10.0	0.7
LnGrp Delay(d),s/veh	73.8	72.3	27.9	82.1	47.1	47.0	307.8	75.4	116.6	67.7	59.8	50.6
LnGrp LOS	E	E	C	F	D	D	F	E	F	E	E	D
Approach Vol, veh/h		1697			1720			2932			1080	
Approach Delay, s/veh		60.5			64.6			193.7			60.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.8	51.1	35.0	40.7	22.4	63.6	20.6	55.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	29.7	43.3	32.0	24.6	16.9	35.2	5.6	51.0
Green Ext Time (p_c), s	0.1	1.9	0.0	9.3	0.5	3.7	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	114.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1210	50	10	1140	20	60	10	10	20	10	30
Future Volume (veh/h)	60	1210	50	10	1140	20	60	10	10	20	10	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	85	1704	69	14	1606	15	85	14	1	28	14	3
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	110	2958	120	24	1918	839	110	92	7	44	24	5
Arrive On Green	0.06	0.60	0.60	0.01	0.55	0.55	0.06	0.05	0.05	0.02	0.02	0.02
Sat Flow, veh/h	1757	4966	201	1757	3505	1533	1757	1700	121	1757	1473	316
Grp Volume(v), veh/h	85	1152	621	14	1606	15	85	0	15	28	0	17
Grp Sat Flow(s),veh/h/ln	1757	1679	1809	1757	1752	1533	1757	0	1822	1757	0	1789
Q Serve(g_s), s	2.9	12.8	12.8	0.5	23.2	0.3	2.9	0.0	0.5	1.0	0.0	0.6
Cycle Q Clear(g_c), s	2.9	12.8	12.8	0.5	23.2	0.3	2.9	0.0	0.5	1.0	0.0	0.6
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.07	1.00		0.18
Lane Grp Cap(c), veh/h	110	2000	1078	24	1918	839	110	0	98	44	0	29
V/C Ratio(X)	0.78	0.58	0.58	0.58	0.84	0.02	0.78	0.00	0.15	0.64	0.00	0.58
Avail Cap(c_a), veh/h	695	2000	1078	695	2023	885	579	0	601	579	0	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	7.5	7.5	29.7	11.5	6.3	28.0	0.0	27.4	29.3	0.0	29.6
Incr Delay (d2), s/veh	4.4	0.5	0.9	7.7	3.3	0.0	4.4	0.0	0.3	5.8	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.9	6.5	0.3	11.8	0.1	1.5	0.0	0.2	0.5	0.0	0.3
LnGrp Delay(d),s/veh	32.4	8.0	8.5	37.4	14.8	6.3	32.4	0.0	27.6	35.1	0.0	36.1
LnGrp LOS	C	A	A	D	B	A	C		C	D		D
Approach Vol, veh/h		1858			1635			100			45	
Approach Delay, s/veh		9.3			14.9			31.7			35.5	
Approach LOS		A			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	41.4	8.3	5.6	8.3	38.5	6.0	7.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.5	14.8	4.9	2.6	4.9	25.2	3.0	2.5
Green Ext Time (p_c), s	0.0	14.8	0.1	0.0	0.1	8.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1120	40	50	1010	0	50	0	50	10	0	10
Future Volume (veh/h)	20	1120	40	50	1010	0	50	0	50	10	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	29	1600	31	71	1443	0	71	0	10	14	0	1
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	57	2422	750	106	2560	797	205	183	153	31	0	85
Arrive On Green	0.03	0.48	0.48	0.06	0.51	0.00	0.06	0.00	0.10	0.02	0.00	0.06
Sat Flow, veh/h	1757	5036	1560	1757	5036	1568	3408	1845	1544	1757	0	1515
Grp Volume(v), veh/h	29	1600	31	71	1443	0	71	0	10	14	0	1
Grp Sat Flow(s),veh/h/ln	1757	1679	1560	1757	1679	1568	1704	1845	1544	1757	0	1515
Q Serve(g_s), s	0.9	13.3	0.6	2.2	10.9	0.0	1.1	0.0	0.3	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.9	13.3	0.6	2.2	10.9	0.0	1.1	0.0	0.3	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	2422	750	106	2560	797	205	183	153	31	0	85
V/C Ratio(X)	0.51	0.66	0.04	0.67	0.56	0.00	0.35	0.00	0.07	0.46	0.00	0.01
Avail Cap(c_a), veh/h	637	2647	820	637	2647	824	1421	803	672	637	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.3	10.9	7.6	25.4	9.3	0.0	24.9	0.0	22.5	26.8	0.0	24.6
Incr Delay (d2), s/veh	2.6	0.7	0.0	2.8	0.3	0.0	0.4	0.0	0.1	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.2	0.3	1.1	5.0	0.0	0.5	0.0	0.1	0.2	0.0	0.0
LnGrp Delay(d),s/veh	28.8	11.5	7.6	28.1	9.7	0.0	25.3	0.0	22.6	30.7	0.0	24.6
LnGrp LOS	C	B	A	C	A		C		C	C		C
Approach Vol, veh/h		1660			1514			81			15	
Approach Delay, s/veh		11.8			10.5			24.9			30.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	31.8	7.8	7.7	6.3	33.3	5.5	10.1
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.2	15.3	3.1	2.0	2.9	12.9	2.4	2.3
Green Ext Time (p_c), s	0.1	10.3	0.1	0.0	0.0	10.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	610	40	10	620	20	70	0	10	30	10	90
Future Volume (veh/h)	130	610	40	10	620	20	70	0	10	30	10	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	188	884	28	14	899	10	101	0	5	43	14	29
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	533	2225	692	118	1611	488	282	0	517	89	73	152
Arrive On Green	0.16	0.44	0.44	0.03	0.32	0.32	0.08	0.00	0.17	0.05	0.14	0.14
Sat Flow, veh/h	3408	5036	1567	3408	5036	1525	3514	0	3108	1757	535	1109
Grp Volume(v), veh/h	188	884	28	14	899	10	101	0	5	43	0	43
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1525	1757	0	1554	1757	0	1644
Q Serve(g_s), s	3.0	7.3	0.6	0.2	9.1	0.3	1.7	0.0	0.1	1.5	0.0	1.4
Cycle Q Clear(g_c), s	3.0	7.3	0.6	0.2	9.1	0.3	1.7	0.0	0.1	1.5	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.67
Lane Grp Cap(c), veh/h	533	2225	692	118	1611	488	282	0	517	89	0	225
V/C Ratio(X)	0.35	0.40	0.04	0.12	0.56	0.02	0.36	0.00	0.01	0.48	0.00	0.19
Avail Cap(c_a), veh/h	1111	2791	868	1111	2791	845	1146	0	1013	573	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.1	11.6	9.7	28.7	17.3	14.3	26.7	0.0	21.3	28.3	0.0	23.5
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.2	0.4	0.0	0.3	0.0	0.0	1.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.4	0.3	0.1	4.2	0.1	0.8	0.0	0.0	0.7	0.0	0.7
LnGrp Delay(d),s/veh	23.2	11.8	9.8	28.9	17.7	14.3	27.0	0.0	21.4	29.8	0.0	24.0
LnGrp LOS	C	B	A	C	B	B	C		C	C		C
Approach Vol, veh/h		1100			923			106			86	
Approach Delay, s/veh		13.7			17.8			26.7			26.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	32.4	9.4	12.9	14.1	24.9	7.6	14.7
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.3	9.3	3.7	3.4	5.0	11.1	3.5	2.1
Green Ext Time (p_c), s	0.0	8.5	0.1	0.2	0.3	8.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	0	400	0	0	0	110	490	0	0	570	100
Future Volume (veh/h)	180	0	400	0	0	0	110	490	0	0	570	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	257	0	197	0	0	0	157	700	0	0	814	50
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	605	0	621	3	3	0	540	2116	0	3	1240	552
Arrive On Green	0.17	0.00	0.20	0.00	0.00	0.00	0.16	0.60	0.00	0.00	0.35	0.35
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1559
Grp Volume(v), veh/h	257	0	197	0	0	0	157	700	0	0	814	50
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1559
Q Serve(g_s), s	3.8	0.0	3.1	0.0	0.0	0.0	2.4	5.7	0.0	0.0	11.3	1.2
Cycle Q Clear(g_c), s	3.8	0.0	3.1	0.0	0.0	0.0	2.4	5.7	0.0	0.0	11.3	1.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	605	0	621	3	3	0	540	2116	0	3	1240	552
V/C Ratio(X)	0.42	0.00	0.32	0.00	0.00	0.00	0.29	0.33	0.00	0.00	0.66	0.09
Avail Cap(c_a), veh/h	1822	0	1626	363	381	0	1762	2116	0	363	1812	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	19.9	0.0	0.0	0.0	21.5	5.7	0.0	0.0	15.8	12.5
Incr Delay (d2), s/veh	0.2	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.4	0.0	0.0	0.0	1.1	2.8	0.0	0.0	5.6	0.6
LnGrp Delay(d),s/veh	21.6	0.0	20.3	0.0	0.0	0.0	21.6	5.8	0.0	0.0	16.6	12.6
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		454			0			857			864	
Approach Delay, s/veh		21.1			0.0			8.7			16.4	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	17.3	14.5	26.2	15.3	2.0	0.0	40.7
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	0.0	5.1	4.4	13.3	5.8	0.0	0.0	7.7
Green Ext Time (p_c), s	0.0	1.1	0.2	6.6	0.4	0.0	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	160	0	0	0	180	540	0	0	300	40
Future Volume (veh/h)	50	0	160	0	0	0	180	540	0	0	300	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	83	0	40	0	0	0	300	900	0	0	500	15
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	372	0	332	0	5	0	376	3171	0	0	1040	457
Arrive On Green	0.11	0.00	0.11	0.00	0.00	0.00	0.21	0.63	0.00	0.00	0.30	0.30
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1542
Grp Volume(v), veh/h	83	0	40	0	0	0	300	900	0	0	500	15
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1542
Q Serve(g_s), s	0.8	0.0	0.4	0.0	0.0	0.0	6.1	3.0	0.0	0.0	4.4	0.3
Cycle Q Clear(g_c), s	0.8	0.0	0.4	0.0	0.0	0.0	6.1	3.0	0.0	0.0	4.4	0.3
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	372	0	332	0	5	0	376	3171	0	0	1040	457
V/C Ratio(X)	0.22	0.00	0.12	0.00	0.00	0.00	0.80	0.28	0.00	0.00	0.48	0.03
Avail Cap(c_a), veh/h	2231	0	1991	0	1513	0	930	3997	0	0	2782	1224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	0.0	15.3	0.0	0.0	0.0	14.1	3.2	0.0	0.0	10.9	9.4
Incr Delay (d2), s/veh	0.4	0.0	0.2	0.0	0.0	0.0	1.5	0.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	0.0	0.0	0.0	3.1	1.4	0.0	0.0	2.2	0.1
LnGrp Delay(d),s/veh	15.9	0.0	15.5	0.0	0.0	0.0	15.6	3.2	0.0	0.0	11.4	9.5
LnGrp LOS	B		B				B	A			B	A
Approach Vol, veh/h		123			0			1200			515	
Approach Delay, s/veh		15.8			0.0			6.3			11.3	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.0	12.6	16.2		0.0		28.8
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		2.8	8.1	6.4		0.0		5.0
Green Ext Time (p_c), s		0.5	0.3	4.4		0.0		8.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	110	90	130	50	50	780	90	40	570	90
Future Volume (veh/h)	200	140	110	90	130	50	50	780	90	40	570	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	197	37	127	183	57	70	1099	59	56	803	59
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	341	388	325	183	222	69	128	1871	836	72	1883	840
Arrive On Green	0.10	0.21	0.21	0.05	0.16	0.16	0.04	0.53	0.53	0.04	0.54	0.54
Sat Flow, veh/h	3408	1845	1543	3408	1349	420	3408	3505	1566	1757	3505	1564
Grp Volume(v), veh/h	282	197	37	127	0	240	70	1099	59	56	803	59
Grp Sat Flow(s),veh/h/ln	1704	1845	1543	1704	0	1770	1704	1752	1566	1757	1752	1564
Q Serve(g_s), s	9.7	11.3	2.3	4.4	0.0	15.7	2.4	25.5	2.2	3.8	16.5	2.2
Cycle Q Clear(g_c), s	9.7	11.3	2.3	4.4	0.0	15.7	2.4	25.5	2.2	3.8	16.5	2.2
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	388	325	183	0	291	128	1871	836	72	1883	840
V/C Ratio(X)	0.83	0.51	0.11	0.69	0.00	0.83	0.55	0.59	0.07	0.78	0.43	0.07
Avail Cap(c_a), veh/h	440	538	450	383	0	487	327	1871	836	168	1883	840
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.00	0.94	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	41.9	38.3	55.8	0.0	48.5	56.7	19.0	13.5	57.0	16.7	13.4
Incr Delay (d2), s/veh	9.0	1.8	0.3	3.3	0.0	9.2	2.2	1.1	0.1	12.5	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	6.0	1.0	2.1	0.0	8.4	1.2	12.7	1.0	2.1	8.1	1.0
LnGrp Delay(d),s/veh	61.9	43.6	38.6	59.1	0.0	57.7	58.9	20.1	13.7	69.5	17.4	13.5
LnGrp LOS	E	D	D	E		E	E	C	B	E	B	B
Approach Vol, veh/h		516			367			1228			918	
Approach Delay, s/veh		53.3			58.2			22.0			20.3	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	30.3	9.0	69.8	16.5	24.7	9.4	69.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.5	35.0	11.5	40.7	15.5	33.0	11.5	40.7
Max Q Clear Time (g_c+I1), s	6.4	13.3	4.4	18.5	11.7	17.7	5.8	27.5
Green Ext Time (p_c), s	0.1	1.8	0.1	7.6	0.3	1.7	0.0	7.7

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	180	10	10	130	10	10	30	10	20	40	90
Future Volume (veh/h)	60	180	10	10	130	10	10	30	10	20	40	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	105	316	16	18	228	6	18	53	7	35	70	32
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	575	29	32	503	426	32	197	26	57	256	217
Arrive On Green	0.08	0.33	0.33	0.02	0.27	0.27	0.02	0.12	0.12	0.03	0.14	0.14
Sat Flow, veh/h	1757	1739	88	1757	1845	1559	1757	1589	210	1757	1845	1568
Grp Volume(v), veh/h	105	0	332	18	228	6	18	0	60	35	70	32
Grp Sat Flow(s),veh/h/ln	1757	0	1827	1757	1845	1559	1757	0	1798	1757	1845	1568
Q Serve(g_s), s	2.2	0.0	5.6	0.4	3.8	0.1	0.4	0.0	1.1	0.7	1.3	0.7
Cycle Q Clear(g_c), s	2.2	0.0	5.6	0.4	3.8	0.1	0.4	0.0	1.1	0.7	1.3	0.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	605	32	503	426	32	0	224	57	256	217
V/C Ratio(X)	0.78	0.00	0.55	0.56	0.45	0.01	0.56	0.00	0.27	0.61	0.27	0.15
Avail Cap(c_a), veh/h	938	0	1463	938	1478	1249	938	0	960	938	985	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	10.2	18.2	11.3	9.9	18.2	0.0	14.9	17.9	14.4	14.2
Incr Delay (d2), s/veh	3.8	0.0	1.1	5.6	0.9	0.0	5.6	0.0	0.9	3.9	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.0	0.2	2.1	0.0	0.2	0.0	0.6	0.4	0.7	0.3
LnGrp Delay(d),s/veh	20.8	0.0	11.4	23.9	12.2	10.0	23.9	0.0	15.8	21.8	15.3	14.6
LnGrp LOS	C		B	C	B	A	C		B	C	B	B
Approach Vol, veh/h		437			252			78			137	
Approach Delay, s/veh		13.6			13.0			17.6			16.8	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	17.4	5.2	9.7	7.4	15.2	5.7	9.2
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.4	7.6	2.4	3.3	4.2	5.8	2.7	3.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.5	0.1	1.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	140	110	80	100	40	30	20	100	50	20	40
Future Volume (veh/h)	40	140	110	80	100	40	30	20	100	50	20	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		0.86
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	74	259	47	148	185	20	56	37	55	84	49	39
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	801	356	191	993	443	74	170	253	108	247	196
Arrive On Green	0.05	0.23	0.23	0.11	0.28	0.28	0.04	0.26	0.26	0.06	0.28	0.28
Sat Flow, veh/h	1757	3505	1558	1757	3505	1562	1757	654	973	1757	883	702
Grp Volume(v), veh/h	74	259	47	148	185	20	56	0	92	84	0	88
Grp Sat Flow(s),veh/h/ln	1757	1752	1558	1757	1752	1562	1757	0	1627	1757	0	1585
Q Serve(g_s), s	2.3	3.3	1.3	4.4	2.2	0.5	1.7	0.0	2.4	2.6	0.0	2.3
Cycle Q Clear(g_c), s	2.3	3.3	1.3	4.4	2.2	0.5	1.7	0.0	2.4	2.6	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	1.00		0.44
Lane Grp Cap(c), veh/h	94	801	356	191	993	443	74	0	424	108	0	443
V/C Ratio(X)	0.79	0.32	0.13	0.78	0.19	0.05	0.76	0.00	0.22	0.78	0.00	0.20
Avail Cap(c_a), veh/h	648	1940	862	648	1940	865	648	0	721	648	0	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	17.4	16.6	23.5	14.7	14.1	25.7	0.0	15.7	25.1	0.0	14.9
Incr Delay (d2), s/veh	5.4	0.3	0.2	2.6	0.1	0.1	5.8	0.0	0.4	4.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	0.6	2.3	1.1	0.2	0.9	0.0	1.1	1.4	0.0	1.0
LnGrp Delay(d),s/veh	30.7	17.7	16.9	26.1	14.8	14.2	31.5	0.0	16.1	29.6	0.0	15.2
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		380			353			148			172	
Approach Delay, s/veh		20.2			19.5			21.9			22.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	17.4	6.8	19.7	7.4	20.4	7.8	18.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	6.4	5.3	3.7	4.3	4.3	4.2	4.6	4.4
Green Ext Time (p_c), s	0.1	2.4	0.0	0.6	0.1	1.6	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	50	90	100	50	30	170	890	100	40	510	70
Future Volume (veh/h)	80	50	90	100	50	30	170	890	100	40	510	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	118	74	26	147	74	10	250	1309	65	59	750	34
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	428	285	413	447	296	246	469	1835	569	169	1590	492
Arrive On Green	0.13	0.15	0.15	0.13	0.16	0.16	0.14	0.36	0.36	0.10	0.32	0.32
Sat Flow, veh/h	3408	1845	2666	3408	1845	1533	3408	5036	1562	1757	5036	1558
Grp Volume(v), veh/h	118	74	26	147	74	10	250	1309	65	59	750	34
Grp Sat Flow(s),veh/h/ln	1704	1845	1333	1704	1845	1533	1704	1679	1562	1757	1679	1558
Q Serve(g_s), s	2.3	2.5	0.6	2.8	2.5	0.4	4.9	16.1	2.0	2.3	8.6	1.1
Cycle Q Clear(g_c), s	2.3	2.5	0.6	2.8	2.5	0.4	4.9	16.1	2.0	2.3	8.6	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	428	285	413	447	296	246	469	1835	569	169	1590	492
V/C Ratio(X)	0.28	0.26	0.06	0.33	0.25	0.04	0.53	0.71	0.11	0.35	0.47	0.07
Avail Cap(c_a), veh/h	944	767	1108	944	767	637	944	2093	649	487	2024	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	26.9	26.0	28.5	26.5	25.6	29.0	19.7	15.2	30.5	19.8	17.3
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.2	0.6	0.1	0.4	1.2	0.1	0.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.2	1.3	1.3	0.2	2.3	7.6	0.9	1.1	4.0	0.5
LnGrp Delay(d),s/veh	28.7	27.5	26.1	28.6	27.1	25.7	29.3	20.9	15.3	31.0	20.2	17.4
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	C	B
Approach Vol, veh/h		218			231			1624			843	
Approach Delay, s/veh		28.0			28.0			21.9			20.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	16.2	14.4	28.1	13.1	16.6	10.9	31.6
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	4.3	4.5	6.9	10.6	4.3	4.5	4.3	18.1
Green Ext Time (p_c), s	0.2	0.6	0.4	6.3	0.2	0.5	0.0	8.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	170	10	10	230	10	10	10	10	10	10	20
Future Volume (veh/h)	30	170	10	10	230	10	10	10	10	10	10	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	258	7	15	348	7	15	15	1	15	15	3
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	641	528	27	595	502	27	119	8	27	104	21
Arrive On Green	0.04	0.35	0.35	0.02	0.32	0.32	0.02	0.07	0.07	0.02	0.07	0.07
Sat Flow, veh/h	1757	1845	1517	1757	1845	1556	1757	1708	114	1757	1490	298
Grp Volume(v), veh/h	45	258	7	15	348	7	15	0	16	15	0	18
Grp Sat Flow(s),veh/h/ln	1757	1845	1517	1757	1845	1556	1757	0	1822	1757	0	1788
Q Serve(g_s), s	0.8	3.6	0.1	0.3	5.3	0.1	0.3	0.0	0.3	0.3	0.0	0.3
Cycle Q Clear(g_c), s	0.8	3.6	0.1	0.3	5.3	0.1	0.3	0.0	0.3	0.3	0.0	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	72	641	528	27	595	502	27	0	127	27	0	124
V/C Ratio(X)	0.63	0.40	0.01	0.55	0.59	0.01	0.55	0.00	0.13	0.55	0.00	0.14
Avail Cap(c_a), veh/h	1257	2200	1810	1257	2200	1855	1257	0	1467	1257	0	1492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.8	8.3	7.2	16.4	9.5	7.7	16.4	0.0	14.6	16.4	0.0	14.7
Incr Delay (d2), s/veh	3.3	0.6	0.0	6.2	1.3	0.0	6.2	0.0	0.2	6.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.9	0.0	0.2	2.8	0.0	0.2	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	19.2	8.9	7.2	22.6	10.8	7.7	22.6	0.0	14.8	22.6	0.0	14.9
LnGrp LOS	B	A	A	C	B	A	C		B	C		B
Approach Vol, veh/h		310			370			31			33	
Approach Delay, s/veh		10.3			11.2			18.6			18.4	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	16.7	5.0	6.8	5.9	15.8	5.0	6.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	2.3	5.6	2.3	2.3	2.8	7.3	2.3	2.3
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	3.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	50	30	10	50
Future Vol, veh/h	20	20	50	30	10	50
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	31	31	77	46	15	77
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.5	7.6	7.7
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	50%	17%
Vol Thru, %	62%	0%	83%
Vol Right, %	38%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	40	60
LT Vol	0	20	10
Through Vol	50	0	50
RT Vol	30	20	0
Lane Flow Rate	123	62	92
Geometry Grp	1	1	1
Degree of Util (X)	0.133	0.07	0.107
Departure Headway (Hd)	3.904	4.117	4.186
Convergence, Y/N	Yes	Yes	Yes
Cap	912	856	851
Service Time	1.956	2.209	2.237
HCM Lane V/C Ratio	0.135	0.072	0.108
HCM Control Delay	7.6	7.5	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	660	350	620	580	40	1010	740	600	60	690	130
Future Volume (vph)	230	660	350	620	580	40	1010	740	600	60	690	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.94	0.95	1.00	0.97	0.86	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3505	2760	4942	3466		4942	3505	1548	3400	6346	2718
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	3505	2760	4942	3466		4942	3505	1548	3400	6346	2718
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	319	917	486	861	806	56	1403	1028	833	83	958	181
RTOR Reduction (vph)	0	0	25	0	3	0	0	0	332	0	0	141
Lane Group Flow (vph)	319	917	461	861	859	0	1403	1028	501	83	958	40
Confl. Peds. (#/hr)						7						3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	2 3	1	6		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	20.0	46.0	82.0	30.0	56.0		30.0	50.4	50.4	16.0	36.4	36.4
Effective Green, g (s)	20.0	46.0	82.0	30.0	56.0		30.0	50.4	50.4	16.0	36.4	36.4
Actuated g/C Ratio	0.12	0.28	0.50	0.18	0.34		0.18	0.31	0.31	0.10	0.22	0.22
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	413	980	1376	901	1180		901	1074	474	330	1405	601
v/s Ratio Prot	0.09	c0.26	0.17	c0.17	0.25		c0.28	0.29		0.02	0.15	
v/s Ratio Perm									c0.32			0.01
v/c Ratio	0.77	0.94	0.33	0.96	0.73		1.56	0.96	1.06	0.25	0.68	0.07
Uniform Delay, d1	70.0	57.8	24.8	66.5	47.5		67.2	55.9	57.0	68.7	58.7	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	15.5	0.1	19.7	2.3		256.2	18.0	57.1	0.1	1.5	0.1
Delay (s)	78.0	73.2	24.9	86.2	49.8		323.4	73.9	114.1	68.8	60.2	50.6
Level of Service	E	E	C	F	D		F	E	F	E	E	D
Approach Delay (s)		60.5			68.0			191.4			59.4	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	115.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	164.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	130	70	270	210	86	30	529	90	163	1267	140
Future Volume (veh/h)	120	130	70	270	210	86	30	529	90	163	1267	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	151	19	314	244	88	35	615	42	190	1473	101
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	375	312	338	269	97	76	1530	670	214	1806	784
Arrive On Green	0.09	0.20	0.20	0.10	0.21	0.21	0.04	0.44	0.44	0.12	0.52	0.52
Sat Flow, veh/h	1757	1845	1536	3408	1289	465	1757	3505	1535	1757	3505	1521
Grp Volume(v), veh/h	140	151	19	314	0	332	35	615	42	190	1473	101
Grp Sat Flow(s),veh/h/ln	1757	1845	1536	1704	0	1755	1757	1752	1535	1757	1752	1521
Q Serve(g_s), s	10.7	9.7	1.4	12.4	0.0	25.1	2.6	16.3	2.2	14.5	47.8	4.7
Cycle Q Clear(g_c), s	10.7	9.7	1.4	12.4	0.0	25.1	2.6	16.3	2.2	14.5	47.8	4.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	375	312	338	0	366	76	1530	670	214	1806	784
V/C Ratio(X)	0.85	0.40	0.06	0.93	0.00	0.91	0.46	0.40	0.06	0.89	0.82	0.13
Avail Cap(c_a), veh/h	252	521	434	338	0	495	252	1530	670	252	1806	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.47	0.00	0.47	0.94	0.94	0.94	0.09	0.09	0.09
Uniform Delay (d), s/veh	60.7	47.0	43.7	60.8	0.0	52.5	63.5	26.2	22.2	58.8	27.6	17.1
Incr Delay (d2), s/veh	13.2	0.5	0.1	18.2	0.0	8.3	3.0	0.7	0.2	3.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	5.0	0.6	6.7	0.0	13.0	1.3	8.0	0.9	7.2	23.2	2.0
LnGrp Delay(d),s/veh	73.9	47.5	43.8	78.9	0.0	60.8	66.5	26.9	22.4	62.1	27.9	17.1
LnGrp LOS	E	D	D	E		E	E	C	C	E	C	B
Approach Vol, veh/h		310			646			692			1764	
Approach Delay, s/veh		59.2			69.6			28.6			31.0	
Approach LOS		E			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	32.2	10.4	75.4	17.2	33.0	21.1	64.7
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	13.5	38.4	19.5	39.7	19.5	38.4	19.5	* 38
Max Q Clear Time (g_c+I1), s	14.4	11.7	4.6	49.8	12.7	27.1	16.5	18.3
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.1	1.2	0.1	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	40.4
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	273	10	29	456	52	20	60	31	84	100	100
Future Volume (veh/h)	80	273	10	29	456	52	20	60	31	84	100	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	369	13	39	616	29	27	81	27	114	135	108
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	137	819	29	54	766	636	41	196	65	145	199	159
Arrive On Green	0.08	0.46	0.46	0.03	0.42	0.42	0.02	0.15	0.15	0.08	0.21	0.21
Sat Flow, veh/h	1757	1769	62	1757	1845	1532	1757	1299	433	1757	950	760
Grp Volume(v), veh/h	108	0	382	39	616	29	27	0	108	114	0	243
Grp Sat Flow(s),veh/h/ln	1757	0	1832	1757	1845	1532	1757	0	1732	1757	0	1711
Q Serve(g_s), s	4.1	0.0	9.6	1.5	19.9	0.8	1.0	0.0	3.8	4.3	0.0	8.9
Cycle Q Clear(g_c), s	4.1	0.0	9.6	1.5	19.9	0.8	1.0	0.0	3.8	4.3	0.0	8.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.25	1.00		0.44
Lane Grp Cap(c), veh/h	137	0	848	54	766	636	41	0	261	145	0	359
V/C Ratio(X)	0.79	0.00	0.45	0.72	0.80	0.05	0.65	0.00	0.41	0.79	0.00	0.68
Avail Cap(c_a), veh/h	272	0	1271	623	1280	1063	195	0	844	195	0	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	12.3	32.5	17.4	11.8	32.8	0.0	26.0	30.5	0.0	24.6
Incr Delay (d2), s/veh	3.7	0.0	0.5	6.6	2.9	0.0	6.3	0.0	0.4	10.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	4.9	0.8	10.5	0.3	0.6	0.0	1.9	2.5	0.0	4.3
LnGrp Delay(d),s/veh	34.4	0.0	12.9	39.2	20.3	11.8	39.1	0.0	26.4	40.5	0.0	25.5
LnGrp LOS	C		B	D	C	B	D		C	D		C
Approach Vol, veh/h		490			684			135			357	
Approach Delay, s/veh		17.6			21.0			29.0			30.3	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	36.3	6.1	18.7	9.8	33.1	10.1	14.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	3.5	11.6	3.0	10.9	6.1	21.9	6.3	5.8
Green Ext Time (p_c), s	0.0	3.6	0.0	0.8	0.0	6.3	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	22.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	253	87	297	333	20	79	32	82	30	131	110
Future Volume (veh/h)	82	253	87	297	333	20	79	32	82	30	131	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.96	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	111	342	34	401	450	12	107	43	80	41	177	114
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	143	450	374	448	770	648	258	160	298	389	296	191
Arrive On Green	0.08	0.24	0.24	0.26	0.42	0.42	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1757	1845	1532	1757	1845	1551	1062	562	1045	1231	1040	670
Grp Volume(v), veh/h	111	342	34	401	450	12	107	0	123	41	0	291
Grp Sat Flow(s),veh/h/ln	1757	1845	1532	1757	1845	1551	1062	0	1606	1231	0	1710
Q Serve(g_s), s	4.0	11.2	1.1	14.3	12.2	0.3	6.3	0.0	3.8	1.7	0.0	9.5
Cycle Q Clear(g_c), s	4.0	11.2	1.1	14.3	12.2	0.3	15.8	0.0	3.8	5.6	0.0	9.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		0.39
Lane Grp Cap(c), veh/h	143	450	374	448	770	648	258	0	458	389	0	487
V/C Ratio(X)	0.77	0.76	0.09	0.89	0.58	0.02	0.42	0.00	0.27	0.11	0.00	0.60
Avail Cap(c_a), veh/h	542	853	709	542	853	718	283	0	495	418	0	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	22.7	18.9	23.3	14.5	11.1	26.8	0.0	18.0	20.1	0.0	20.0
Incr Delay (d2), s/veh	3.3	3.8	0.1	13.8	1.1	0.0	1.5	0.0	0.4	0.2	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	0.5	8.6	6.4	0.1	2.0	0.0	1.8	0.6	0.0	4.7
LnGrp Delay(d),s/veh	32.5	26.5	19.1	37.1	15.7	11.1	28.3	0.0	18.4	20.3	0.0	22.0
LnGrp LOS	C	C	B	D	B	B	C		B	C		C
Approach Vol, veh/h		487			863			230			332	
Approach Delay, s/veh		27.4			25.6			23.0			21.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.0	20.8		23.0	9.8	32.1		23.0
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	16.3	13.2		11.5	6.0	14.2		17.8
Green Ext Time (p_c), s	0.3	2.7		1.7	0.1	3.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	246	63	90	522	30	66	97	50	20	105	102
Future Volume (veh/h)	66	246	63	90	522	30	66	97	50	20	105	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.96	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	96	357	32	130	757	15	96	141	58	29	152	119
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	666	553	164	692	565	124	364	150	42	226	177
Arrive On Green	0.08	0.36	0.36	0.09	0.37	0.37	0.07	0.30	0.30	0.02	0.25	0.25
Sat Flow, veh/h	1757	1845	1533	1757	1845	1507	1757	1225	504	1757	903	707
Grp Volume(v), veh/h	96	357	32	130	757	15	96	0	199	29	0	271
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1757	1845	1507	1757	0	1729	1757	0	1611
Q Serve(g_s), s	4.3	12.3	1.1	5.8	30.0	0.5	4.3	0.0	7.3	1.3	0.0	12.1
Cycle Q Clear(g_c), s	4.3	12.3	1.1	5.8	30.0	0.5	4.3	0.0	7.3	1.3	0.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.44
Lane Grp Cap(c), veh/h	139	666	553	164	692	565	124	0	514	42	0	403
V/C Ratio(X)	0.69	0.54	0.06	0.79	1.09	0.03	0.78	0.00	0.39	0.69	0.00	0.67
Avail Cap(c_a), veh/h	439	692	575	439	692	565	439	0	519	439	0	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	20.3	16.7	35.5	25.0	15.8	36.6	0.0	22.3	38.8	0.0	27.0
Incr Delay (d2), s/veh	2.3	1.0	0.1	3.2	62.9	0.0	3.9	0.0	0.5	7.5	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.4	0.5	3.0	27.3	0.2	2.2	0.0	3.6	0.7	0.0	5.7
LnGrp Delay(d),s/veh	38.1	21.3	16.8	38.7	87.9	15.8	40.5	0.0	22.8	46.2	0.0	29.8
LnGrp LOS	D	C	B	D	F	B	D		C	D		C
Approach Vol, veh/h		485			902			295			300	
Approach Delay, s/veh		24.3			79.6			28.6			31.4	
Approach LOS		C			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.9	9.6	24.5	10.8	35.0	5.9	28.3
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	7.3	14.3	6.3	14.1	6.3	32.0	3.3	9.3
Green Ext Time (p_c), s	0.1	2.7	0.1	1.2	0.1	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.2
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	290	190	679	760	69	690	500	574	57	1350	170
Future Volume (veh/h)	80	290	190	679	760	69	690	500	574	57	1350	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	85	309	172	722	809	69	734	532	239	61	1436	79
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	363	781	1065	811	913	78	824	1268	567	343	1879	796
Arrive On Green	0.11	0.22	0.22	0.16	0.28	0.28	0.17	0.36	0.36	0.10	0.30	0.30
Sat Flow, veh/h	3408	3505	2721	4954	3263	278	4954	3505	1568	3408	6346	2689
Grp Volume(v), veh/h	85	309	172	722	434	444	734	532	239	61	1436	79
Grp Sat Flow(s),veh/h/ln	1704	1752	1360	1651	1752	1789	1651	1752	1568	1704	1586	1344
Q Serve(g_s), s	3.3	10.9	6.0	20.8	34.5	34.5	21.1	16.6	16.7	2.4	29.9	3.1
Cycle Q Clear(g_c), s	3.3	10.9	6.0	20.8	34.5	34.5	21.1	16.6	16.7	2.4	29.9	3.1
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	781	1065	811	491	501	824	1268	567	343	1879	796
V/C Ratio(X)	0.23	0.40	0.16	0.89	0.89	0.89	0.89	0.42	0.42	0.18	0.76	0.10
Avail Cap(c_a), veh/h	703	1108	1319	1022	554	566	1022	1268	567	703	2007	850
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	48.2	29.0	59.6	50.1	50.1	59.3	34.9	35.0	59.9	46.6	37.1
Incr Delay (d2), s/veh	0.1	0.3	0.1	7.2	14.6	14.4	7.5	0.3	0.7	0.1	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	5.3	2.3	10.0	18.8	19.1	10.2	8.1	7.3	1.1	13.4	1.2
LnGrp Delay(d),s/veh	59.7	48.5	29.1	66.8	64.8	64.6	66.8	35.2	35.7	60.0	48.4	37.2
LnGrp LOS	E	D	C	E	E	E	E	D	D	E	D	D
Approach Vol, veh/h		566			1600			1505			1576	
Approach Delay, s/veh		44.3			65.6			50.7			48.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.8	38.4	29.2	49.1	20.5	46.7	19.6	58.6
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	22.8	12.9	23.1	31.9	5.3	36.5	4.4	18.7
Green Ext Time (p_c), s	1.1	2.6	1.1	10.2	0.1	3.5	0.1	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	53.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	816	40	10	1331	30	30	10	10	30	10	137
Future Volume (veh/h)	55	816	40	10	1331	30	30	10	10	30	10	137
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	62	927	43	11	1512	18	34	11	1	34	11	20
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	78	2922	135	20	1963	858	52	46	4	52	16	29
Arrive On Green	0.04	0.59	0.59	0.01	0.56	0.56	0.03	0.03	0.03	0.03	0.03	0.03
Sat Flow, veh/h	1757	4928	228	1757	3505	1533	1757	1666	151	1757	588	1068
Grp Volume(v), veh/h	62	631	339	11	1512	18	34	0	12	34	0	31
Grp Sat Flow(s),veh/h/ln	1757	1679	1799	1757	1752	1533	1757	0	1817	1757	0	1656
Q Serve(g_s), s	1.9	5.3	5.3	0.3	18.6	0.3	1.1	0.0	0.4	1.1	0.0	1.0
Cycle Q Clear(g_c), s	1.9	5.3	5.3	0.3	18.6	0.3	1.1	0.0	0.4	1.1	0.0	1.0
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.08	1.00		0.65
Lane Grp Cap(c), veh/h	78	1991	1067	20	1963	858	52	0	50	52	0	45
V/C Ratio(X)	0.80	0.32	0.32	0.56	0.77	0.02	0.66	0.00	0.24	0.66	0.00	0.68
Avail Cap(c_a), veh/h	756	2108	1129	756	2200	962	630	0	652	630	0	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	5.7	5.7	27.4	9.5	5.5	26.8	0.0	26.5	26.8	0.0	26.9
Incr Delay (d2), s/veh	6.8	0.1	0.2	8.8	1.7	0.0	5.2	0.0	0.9	5.2	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.4	2.6	0.2	9.3	0.1	0.6	0.0	0.2	0.6	0.0	0.5
LnGrp Delay(d),s/veh	33.2	5.8	5.9	36.2	11.2	5.5	32.0	0.0	27.5	32.0	0.0	33.5
LnGrp LOS	C	A	A	D	B	A	C		C	C		C
Approach Vol, veh/h		1032			1541			46			65	
Approach Delay, s/veh		7.5			11.3			30.8			32.7	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	38.4	6.1	6.1	7.0	36.5	6.1	6.1
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.6	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.3	7.3	3.1	3.0	3.9	20.6	3.1	2.4
Green Ext Time (p_c), s	0.0	9.2	0.0	0.1	0.1	10.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	766	20	155	1261	0	40	0	20	0	0	0
Future Volume (veh/h)	10	766	20	155	1261	0	40	0	20	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	870	11	176	1433	0	45	0	3	0	0	-10
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	2191	665	228	2773	863	169	120	101	5	0	280
Arrive On Green	0.01	0.43	0.43	0.13	0.55	0.00	0.05	0.00	0.06	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1529	1757	5036	1568	3408	1845	1557	1757	1845	0
Grp Volume(v), veh/h	11	870	11	176	1433	0	45	0	3	0	-10	-10
Grp Sat Flow(s),veh/h/ln	1757	1679	1529	1757	1679	1568	1704	1845	1557	1757	1845	1568
Q Serve(g_s), s	0.2	4.6	0.2	3.8	7.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	4.6	0.2	3.8	7.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	25	2191	665	228	2773	863	169	120	101	5	0	0
V/C Ratio(X)	0.43	0.40	0.02	0.77	0.52	0.00	0.27	0.00	0.03	0.00	0.00	0.00
Avail Cap(c_a), veh/h	903	3752	1139	903	3752	1168	2014	1137	960	903	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	19.0	7.5	6.3	16.4	5.5	0.0	17.8	0.0	17.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.2	0.0	2.1	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.1	0.1	1.9	3.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	23.3	7.7	6.3	18.4	5.7	0.0	18.1	0.0	17.1	0.0	0.0	0.0
LnGrp LOS	C	A	A	B	A		B		B			
Approach Vol, veh/h		892			1609			48			-20	
Approach Delay, s/veh		7.9			7.1			18.1			0.0	
Approach LOS		A			A			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	22.2	6.4	0.7	5.1	26.7	0.0	7.1
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	5.8	6.6	2.5	0.0	2.2	9.0	0.0	2.1
Green Ext Time (p_c), s	0.2	7.9	0.1	0.0	0.0	12.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	267	110	10	896	24	30	0	10	42	10	357
Future Volume (veh/h)	108	267	110	10	896	24	30	0	10	42	10	357
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	124	307	60	11	1030	11	34	0	3	48	11	95
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	480	2328	712	95	1759	534	150	0	474	95	28	238
Arrive On Green	0.14	0.46	0.46	0.03	0.35	0.35	0.04	0.00	0.16	0.05	0.17	0.17
Sat Flow, veh/h	3408	5036	1541	3408	5036	1529	3514	0	3027	1757	164	1420
Grp Volume(v), veh/h	124	307	60	11	1030	11	34	0	3	48	0	106
Grp Sat Flow(s),veh/h/ln	1704	1679	1541	1704	1679	1529	1757	0	1514	1757	0	1585
Q Serve(g_s), s	2.0	2.2	1.4	0.2	10.5	0.3	0.6	0.0	0.1	1.7	0.0	3.7
Cycle Q Clear(g_c), s	2.0	2.2	1.4	0.2	10.5	0.3	0.6	0.0	0.1	1.7	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	480	2328	712	95	1759	534	150	0	474	95	0	266
V/C Ratio(X)	0.26	0.13	0.08	0.12	0.59	0.02	0.23	0.00	0.01	0.50	0.00	0.40
Avail Cap(c_a), veh/h	1085	2725	834	1085	2725	827	1119	0	964	559	0	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	9.7	9.4	29.8	16.7	13.4	29.1	0.0	22.4	28.9	0.0	23.3
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.2	0.4	0.0	0.3	0.0	0.0	1.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0	0.6	0.1	4.9	0.1	0.3	0.0	0.0	0.9	0.0	1.7
LnGrp Delay(d),s/veh	24.2	9.7	9.5	30.0	17.2	13.4	29.3	0.0	22.4	30.4	0.0	24.7
LnGrp LOS	C	A	A	C	B	B	C		C	C		C
Approach Vol, veh/h		491			1052			37			154	
Approach Delay, s/veh		13.3			17.3			28.8			26.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	34.3	7.2	15.0	13.4	27.2	7.9	14.3
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	4.2	2.6	5.7	4.0	12.5	3.7	2.1
Green Ext Time (p_c), s	0.0	3.0	0.0	0.6	0.2	9.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	0	266	0	0	0	481	573	0	0	1376	359
Future Volume (veh/h)	183	0	266	0	0	0	481	573	0	0	1376	359
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	195	0	87	0	0	0	512	610	0	0	1464	249
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	504	0	441	3	3	0	632	2432	0	3	1514	666
Arrive On Green	0.14	0.00	0.14	0.00	0.00	0.00	0.19	0.69	0.00	0.00	0.43	0.43
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1542
Grp Volume(v), veh/h	195	0	87	0	0	0	512	610	0	0	1464	249
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1542
Q Serve(g_s), s	3.5	0.0	1.7	0.0	0.0	0.0	10.0	4.5	0.0	0.0	28.3	7.6
Cycle Q Clear(g_c), s	3.5	0.0	1.7	0.0	0.0	0.0	10.0	4.5	0.0	0.0	28.3	7.6
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	504	0	441	3	3	0	632	2432	0	3	1514	666
V/C Ratio(X)	0.39	0.00	0.20	0.00	0.00	0.00	0.81	0.25	0.00	0.00	0.97	0.37
Avail Cap(c_a), veh/h	1523	0	1359	304	319	0	1472	2432	0	304	1514	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	26.4	0.0	0.0	0.0	27.1	3.9	0.0	0.0	19.2	13.4
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.0	0.0	0.0	1.0	0.1	0.0	0.0	16.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.8	0.0	0.0	0.0	4.8	2.1	0.0	0.0	17.0	3.3
LnGrp Delay(d),s/veh	27.2	0.0	26.7	0.0	0.0	0.0	28.1	4.0	0.0	0.0	35.2	13.9
LnGrp LOS	C		C				C	A			D	B
Approach Vol, veh/h		282			0			1122			1713	
Approach Delay, s/veh		27.0			0.0			15.0			32.1	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	15.6	18.2	35.7	15.3	0.3	0.0	53.9
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	0.0	3.7	12.0	30.3	5.5	0.0	0.0	6.5
Green Ext Time (p_c), s	0.0	0.4	0.9	0.0	0.3	0.0	0.0	5.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	190	0	0	0	390	663	0	0	927	120
Future Volume (veh/h)	60	0	190	0	0	0	390	663	0	0	927	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	77	0	23	0	0	0	500	850	0	0	1188	83
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	200	0	176	0	3	0	534	3985	0	0	1469	646
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.00	0.30	0.79	0.00	0.00	0.42	0.42
Sat Flow, veh/h	3514	0	3105	0	1845	0	1757	5202	0	0	3597	1541
Grp Volume(v), veh/h	77	0	23	0	0	0	500	850	0	0	1188	83
Grp Sat Flow(s),veh/h/ln	1757	0	1552	0	1845	0	1757	1679	0	0	1752	1541
Q Serve(g_s), s	1.4	0.0	0.5	0.0	0.0	0.0	18.2	2.8	0.0	0.0	19.6	2.2
Cycle Q Clear(g_c), s	1.4	0.0	0.5	0.0	0.0	0.0	18.2	2.8	0.0	0.0	19.6	2.2
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	200	0	176	0	3	0	534	3985	0	0	1469	646
V/C Ratio(X)	0.39	0.00	0.13	0.00	0.00	0.00	0.94	0.21	0.00	0.00	0.81	0.13
Avail Cap(c_a), veh/h	1281	0	1132	0	869	0	534	3985	0	0	1597	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	29.5	0.0	0.0	0.0	22.3	1.7	0.0	0.0	16.8	11.7
Incr Delay (d2), s/veh	1.7	0.0	0.5	0.0	0.0	0.0	23.9	0.0	0.0	0.0	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.2	0.0	0.0	0.0	12.3	1.3	0.0	0.0	10.1	0.9
LnGrp Delay(d),s/veh	31.7	0.0	30.0	0.0	0.0	0.0	46.2	1.8	0.0	0.0	20.0	11.9
LnGrp LOS	C		C				D	A			C	B
Approach Vol, veh/h		100			0			1350			1271	
Approach Delay, s/veh		31.3			0.0			18.2			19.5	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		8.7	24.5	32.6		0.0		57.1
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		3.4	20.2	21.6		0.0		4.8
Green Ext Time (p_c), s		0.4	0.0	5.8		0.0		8.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	170	50	170	420	82	110	505	100	114	1350	390
Future Volume (veh/h)	100	170	50	170	420	82	110	505	100	114	1350	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	118	200	18	200	494	91	129	594	42	134	1588	328
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	169	563	467	257	499	92	181	1334	581	159	1465	639
Arrive On Green	0.05	0.31	0.31	0.08	0.33	0.33	0.05	0.38	0.38	0.09	0.42	0.42
Sat Flow, veh/h	3408	1845	1530	3408	1508	278	3408	3505	1525	1757	3505	1530
Grp Volume(v), veh/h	118	200	18	200	0	585	129	594	42	134	1588	328
Grp Sat Flow(s),veh/h/ln	1704	1845	1530	1704	0	1786	1704	1752	1525	1757	1752	1530
Q Serve(g_s), s	4.4	11.0	1.1	7.5	0.0	42.4	4.8	16.4	2.3	9.8	54.3	20.7
Cycle Q Clear(g_c), s	4.4	11.0	1.1	7.5	0.0	42.4	4.8	16.4	2.3	9.8	54.3	20.7
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	169	563	467	257	0	591	181	1334	581	159	1465	639
V/C Ratio(X)	0.70	0.36	0.04	0.78	0.00	0.99	0.71	0.45	0.07	0.84	1.08	0.51
Avail Cap(c_a), veh/h	354	563	467	485	0	591	354	1334	581	209	1465	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.61	0.00	0.61	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	35.2	31.8	59.0	0.0	43.3	60.6	30.0	25.6	58.2	37.8	28.0
Incr Delay (d2), s/veh	3.8	0.7	0.1	2.3	0.0	26.4	3.3	0.9	0.2	19.1	49.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	0.5	3.6	0.0	25.1	2.4	8.1	1.0	5.6	36.4	9.2
LnGrp Delay(d),s/veh	64.6	35.9	31.8	61.4	0.0	69.7	63.9	30.9	25.8	77.3	87.7	31.0
LnGrp LOS	E	D	C	E		E	E	C	C	E	F	C
Approach Vol, veh/h		336			785			765			2050	
Approach Delay, s/veh		45.7			67.6			36.2			78.0	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	44.7	11.4	59.6	11.0	48.0	16.2	54.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	18.5	38.0	13.5	40.7	13.5	43.0	15.5	38.7
Max Q Clear Time (g_c+I1), s	9.5	13.0	6.8	56.3	6.4	44.4	11.8	18.4
Green Ext Time (p_c), s	0.3	1.8	0.1	0.0	0.1	0.0	0.1	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	65.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	130	54	20	290	80	42	140	10	60	140	250
Future Volume (veh/h)	190	130	54	20	290	80	42	140	10	60	140	250
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	317	217	73	33	483	60	70	233	15	100	233	89
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	356	631	212	46	561	462	90	324	21	129	391	332
Arrive On Green	0.20	0.48	0.48	0.03	0.30	0.30	0.05	0.19	0.19	0.07	0.21	0.21
Sat Flow, veh/h	1757	1312	441	1757	1845	1520	1757	1707	110	1757	1845	1568
Grp Volume(v), veh/h	317	0	290	33	483	60	70	0	248	100	233	89
Grp Sat Flow(s),veh/h/ln	1757	0	1753	1757	1845	1520	1757	0	1817	1757	1845	1568
Q Serve(g_s), s	14.1	0.0	8.3	1.5	19.8	2.3	3.2	0.0	10.3	4.5	9.2	3.8
Cycle Q Clear(g_c), s	14.1	0.0	8.3	1.5	19.8	2.3	3.2	0.0	10.3	4.5	9.2	3.8
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	356	0	843	46	561	462	90	0	345	129	391	332
V/C Ratio(X)	0.89	0.00	0.34	0.72	0.86	0.13	0.78	0.00	0.72	0.78	0.60	0.27
Avail Cap(c_a), veh/h	437	0	843	437	689	567	437	0	452	437	459	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	13.0	38.8	26.4	20.3	37.7	0.0	30.5	36.6	28.6	26.5
Incr Delay (d2), s/veh	15.4	0.0	0.3	7.8	10.1	0.2	5.3	0.0	4.8	3.8	2.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	4.0	0.8	11.6	1.0	1.7	0.0	5.6	2.3	4.9	1.7
LnGrp Delay(d),s/veh	46.6	0.0	13.3	46.7	36.4	20.4	42.9	0.0	35.3	40.4	30.7	27.1
LnGrp LOS	D		B	D	D	C	D		D	D	C	C
Approach Vol, veh/h		607			576			318			422	
Approach Delay, s/veh		30.7			35.4			37.0			32.2	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	43.6	8.6	21.5	20.8	29.4	10.4	19.8
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.5	10.3	5.2	11.2	16.1	21.8	6.5	12.3
Green Ext Time (p_c), s	0.0	2.2	0.1	1.5	0.2	2.6	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	130	40	30	230	100	50	124	40	90	181	110
Future Volume (veh/h)	30	130	40	30	230	100	50	124	40	90	181	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	197	13	45	348	32	76	188	53	136	274	152
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	62	787	346	62	787	338	97	441	124	175	397	220
Arrive On Green	0.04	0.22	0.22	0.04	0.22	0.22	0.06	0.33	0.33	0.10	0.37	0.37
Sat Flow, veh/h	1757	3505	1544	1757	3505	1504	1757	1357	383	1757	1075	596
Grp Volume(v), veh/h	45	197	13	45	348	32	76	0	241	136	0	426
Grp Sat Flow(s),veh/h/ln	1757	1752	1544	1757	1752	1504	1757	0	1740	1757	0	1672
Q Serve(g_s), s	1.5	2.7	0.4	1.5	5.0	1.0	2.5	0.0	6.4	4.4	0.0	12.7
Cycle Q Clear(g_c), s	1.5	2.7	0.4	1.5	5.0	1.0	2.5	0.0	6.4	4.4	0.0	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.36
Lane Grp Cap(c), veh/h	62	787	346	62	787	338	97	0	566	175	0	618
V/C Ratio(X)	0.72	0.25	0.04	0.72	0.44	0.09	0.78	0.00	0.43	0.78	0.00	0.69
Avail Cap(c_a), veh/h	599	1791	789	599	1791	769	599	0	711	599	0	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	18.7	17.8	28.0	19.6	18.0	27.4	0.0	15.5	25.8	0.0	15.7
Incr Delay (d2), s/veh	5.8	0.2	0.1	5.8	0.6	0.2	5.0	0.0	0.7	2.8	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.3	0.2	0.8	2.5	0.4	1.3	0.0	3.1	2.3	0.0	6.3
LnGrp Delay(d),s/veh	33.8	18.9	17.9	33.8	20.2	18.2	32.4	0.0	16.2	28.5	0.0	18.7
LnGrp LOS	C	B	B	C	C	B	C		B	C		B
Approach Vol, veh/h		255			425			317			562	
Approach Delay, s/veh		21.5			21.5			20.1			21.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	18.2	7.8	26.2	6.6	18.2	10.4	23.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.5	4.7	4.5	14.7	3.5	7.0	6.4	8.4
Green Ext Time (p_c), s	0.0	1.6	0.1	2.6	0.0	3.1	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	216	126	335	292	120	163	736	117	110	1224	317
Future Volume (veh/h)	134	216	126	335	292	120	163	736	117	110	1224	317
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	163	263	49	409	356	55	199	898	37	134	1493	183
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	345	491	596	486	567	478	348	1533	474	175	1496	452
Arrive On Green	0.10	0.27	0.27	0.14	0.31	0.31	0.10	0.30	0.30	0.10	0.30	0.30
Sat Flow, veh/h	3408	1845	2241	3408	1845	1554	3408	5036	1558	1757	5036	1522
Grp Volume(v), veh/h	163	263	49	409	356	55	199	898	37	134	1493	183
Grp Sat Flow(s),veh/h/ln	1704	1845	1120	1704	1845	1554	1704	1679	1558	1757	1679	1522
Q Serve(g_s), s	4.4	11.9	1.6	11.4	16.2	2.5	5.4	14.7	1.7	7.3	28.9	9.4
Cycle Q Clear(g_c), s	4.4	11.9	1.6	11.4	16.2	2.5	5.4	14.7	1.7	7.3	28.9	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	491	596	486	567	478	348	1533	474	175	1496	452
V/C Ratio(X)	0.47	0.54	0.08	0.84	0.63	0.12	0.57	0.59	0.08	0.76	1.00	0.40
Avail Cap(c_a), veh/h	698	567	688	698	567	478	698	1547	479	360	1496	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	30.7	26.9	40.8	29.0	24.3	41.8	28.7	24.2	42.8	34.3	27.4
Incr Delay (d2), s/veh	0.4	1.3	0.1	4.4	2.6	0.2	0.6	0.7	0.1	2.6	22.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	0.5	5.7	8.6	1.1	2.6	6.9	0.7	3.7	16.4	4.1
LnGrp Delay(d),s/veh	41.8	32.0	27.0	45.2	31.6	24.4	42.4	29.4	24.3	45.5	57.1	28.3
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	E	C
Approach Vol, veh/h		475			820			1134			1810	
Approach Delay, s/veh		34.8			37.9			31.5			53.3	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.9	31.0	14.5	34.3	13.9	35.0	13.7	35.0
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	13.4	13.9	7.4	30.9	6.4	18.2	9.3	16.7
Green Ext Time (p_c), s	0.5	2.1	0.3	0.0	0.2	2.4	0.1	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.4
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	331	36	58	454	10	23	10	65	10	10	60
Future Volume (veh/h)	20	331	36	58	454	10	23	10	65	10	10	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	419	24	73	575	7	29	13	11	13	13	8
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	42	746	614	95	801	660	48	94	79	23	93	57
Arrive On Green	0.02	0.40	0.40	0.05	0.43	0.43	0.03	0.10	0.10	0.01	0.09	0.09
Sat Flow, veh/h	1757	1845	1520	1757	1845	1521	1757	911	771	1757	1042	641
Grp Volume(v), veh/h	25	419	24	73	575	7	29	0	24	13	0	21
Grp Sat Flow(s),veh/h/ln	1757	1845	1520	1757	1845	1521	1757	0	1682	1757	0	1684
Q Serve(g_s), s	0.6	7.6	0.4	1.8	11.1	0.1	0.7	0.0	0.6	0.3	0.0	0.5
Cycle Q Clear(g_c), s	0.6	7.6	0.4	1.8	11.1	0.1	0.7	0.0	0.6	0.3	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.38
Lane Grp Cap(c), veh/h	42	746	614	95	801	660	48	0	173	23	0	150
V/C Ratio(X)	0.59	0.56	0.04	0.77	0.72	0.01	0.61	0.00	0.14	0.55	0.00	0.14
Avail Cap(c_a), veh/h	970	1698	1399	970	1698	1400	970	0	1045	970	0	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	10.0	7.8	20.3	10.1	7.0	20.9	0.0	17.7	21.3	0.0	18.3
Incr Delay (d2), s/veh	4.9	0.9	0.0	4.9	1.7	0.0	4.6	0.0	0.1	7.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.0	0.2	1.0	6.0	0.0	0.4	0.0	0.3	0.2	0.0	0.2
LnGrp Delay(d),s/veh	25.9	10.9	7.9	25.2	11.8	7.0	25.5	0.0	17.9	28.7	0.0	18.4
LnGrp LOS	C	B	A	C	B	A	C		B	C		B
Approach Vol, veh/h		468			655			53			34	
Approach Delay, s/veh		11.6			13.3			22.0			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	22.6	5.7	8.4	5.5	23.9	5.1	9.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	3.8	9.6	2.7	2.5	2.6	13.1	2.3	2.6
Green Ext Time (p_c), s	0.1	4.0	0.0	0.0	0.0	5.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	20	71	24	20	139
Future Vol, veh/h	47	20	71	24	20	139
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	62	26	93	32	26	183
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.3	8	8.8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	70%	13%
Vol Thru, %	75%	0%	87%
Vol Right, %	25%	30%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	95	67	159
LT Vol	0	47	20
Through Vol	71	0	139
RT Vol	24	20	0
Lane Flow Rate	125	88	209
Geometry Grp	1	1	1
Degree of Util (X)	0.147	0.114	0.252
Departure Headway (Hd)	4.232	4.648	4.331
Convergence, Y/N	Yes	Yes	Yes
Cap	850	773	835
Service Time	2.246	2.666	2.331
HCM Lane V/C Ratio	0.147	0.114	0.25
HCM Control Delay	8	8.3	8.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.4	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	100	70	110	100	133	40	801	116	54	695	30
Future Volume (veh/h)	40	100	70	110	100	133	40	801	116	54	695	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	56	141	20	155	141	141	56	1128	90	76	979	21
Adj No. of Lanes	1	1	1	2	1	0	1	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	96	332	280	215	160	160	96	1920	841	104	1935	859
Arrive On Green	0.05	0.18	0.18	0.06	0.19	0.19	0.05	0.55	0.55	0.06	0.55	0.55
Sat Flow, veh/h	1757	1845	1555	3408	847	847	1757	3505	1536	1757	3505	1555
Grp Volume(v), veh/h	56	141	20	155	0	282	56	1128	90	76	979	21
Grp Sat Flow(s),veh/h/ln	1757	1845	1555	1704	0	1694	1757	1752	1536	1757	1752	1555
Q Serve(g_s), s	3.9	8.6	1.3	5.6	0.0	20.4	3.9	27.0	3.5	5.4	21.9	0.8
Cycle Q Clear(g_c), s	3.9	8.6	1.3	5.6	0.0	20.4	3.9	27.0	3.5	5.4	21.9	0.8
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	332	280	215	0	320	96	1920	841	104	1935	859
V/C Ratio(X)	0.58	0.42	0.07	0.72	0.00	0.88	0.58	0.59	0.11	0.73	0.51	0.02
Avail Cap(c_a), veh/h	160	562	474	527	0	516	160	1920	841	160	1935	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.00	0.90	0.27	0.27	0.27	0.87	0.87	0.87
Uniform Delay (d), s/veh	58.2	45.9	42.9	57.9	0.0	49.8	58.2	19.0	13.7	58.3	17.5	12.8
Incr Delay (d2), s/veh	4.1	0.6	0.1	3.0	0.0	7.9	1.1	0.4	0.1	6.3	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.4	0.6	2.7	0.0	10.3	1.9	13.1	1.5	2.8	10.8	0.3
LnGrp Delay(d),s/veh	62.3	46.5	43.0	61.0	0.0	57.7	59.3	19.4	13.8	64.6	18.4	12.9
LnGrp LOS	E	D	D	E		E	E	B	B	E	B	B
Approach Vol, veh/h		217			437			1274			1076	
Approach Delay, s/veh		50.3			58.8			20.7			21.5	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	27.3	11.4	74.9	11.4	28.4	11.9	74.3
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	38.4	11.5	31.7	11.5	38.4	11.5	* 38
Max Q Clear Time (g_c+I1), s	7.6	10.6	5.9	23.9	5.9	22.4	7.4	29.0
Green Ext Time (p_c), s	0.3	0.6	0.0	4.8	0.0	1.2	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	230	10	23	283	58	20	30	13	33	40	30
Future Volume (veh/h)	30	230	10	23	283	58	20	30	13	33	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.93	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	48	371	14	37	456	47	32	48	6	53	65	25
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	72	667	25	59	683	579	52	159	20	77	145	56
Arrive On Green	0.04	0.38	0.38	0.03	0.37	0.37	0.03	0.10	0.10	0.04	0.11	0.11
Sat Flow, veh/h	1757	1766	67	1757	1845	1566	1757	1594	199	1757	1270	488
Grp Volume(v), veh/h	48	0	385	37	456	47	32	0	54	53	0	90
Grp Sat Flow(s),veh/h/ln	1757	0	1832	1757	1845	1566	1757	0	1793	1757	0	1758
Q Serve(g_s), s	1.1	0.0	6.9	0.9	8.6	0.8	0.7	0.0	1.2	1.2	0.0	2.0
Cycle Q Clear(g_c), s	1.1	0.0	6.9	0.9	8.6	0.8	0.7	0.0	1.2	1.2	0.0	2.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.11	1.00		0.28
Lane Grp Cap(c), veh/h	72	0	692	59	683	579	52	0	179	77	0	201
V/C Ratio(X)	0.67	0.00	0.56	0.63	0.67	0.08	0.61	0.00	0.30	0.68	0.00	0.45
Avail Cap(c_a), veh/h	444	0	2072	1014	2086	1771	317	0	1424	317	0	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	10.2	19.8	11.0	8.5	19.9	0.0	17.4	19.6	0.0	17.2
Incr Delay (d2), s/veh	3.9	0.0	1.0	4.1	1.6	0.1	4.3	0.0	0.3	3.9	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	3.6	0.5	4.6	0.4	0.4	0.0	0.6	0.7	0.0	1.0
LnGrp Delay(d),s/veh	23.6	0.0	11.2	23.9	12.6	8.6	24.2	0.0	17.7	23.5	0.0	17.8
LnGrp LOS	C		B	C	B	A	C		B	C		B
Approach Vol, veh/h		433			540			86			143	
Approach Delay, s/veh		12.6			13.0			20.1			19.9	
Approach LOS		B			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	20.7	5.7	9.2	6.2	20.4	6.3	8.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	2.9	8.9	2.7	4.0	3.1	10.6	3.2	3.2
Green Ext Time (p_c), s	0.0	3.7	0.0	0.3	0.0	4.8	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	246	26	86	224	10	104	42	107	10	40	30
Future Volume (veh/h)	82	246	26	86	224	10	104	42	107	10	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	126	378	12	132	345	4	160	65	139	15	62	18
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	163	565	470	171	574	484	458	132	283	347	348	101
Arrive On Green	0.09	0.31	0.31	0.10	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1757	1845	1535	1757	1845	1555	1292	522	1116	1156	1372	398
Grp Volume(v), veh/h	126	378	12	132	345	4	160	0	204	15	0	80
Grp Sat Flow(s),veh/h/ln	1757	1845	1535	1757	1845	1555	1292	0	1637	1156	0	1771
Q Serve(g_s), s	2.9	7.3	0.2	3.0	6.5	0.1	4.5	0.0	4.3	0.5	0.0	1.4
Cycle Q Clear(g_c), s	2.9	7.3	0.2	3.0	6.5	0.1	6.0	0.0	4.3	4.8	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.68	1.00		0.22
Lane Grp Cap(c), veh/h	163	565	470	171	574	484	458	0	416	347	0	449
V/C Ratio(X)	0.77	0.67	0.03	0.77	0.60	0.01	0.35	0.00	0.49	0.04	0.00	0.18
Avail Cap(c_a), veh/h	859	1353	1125	859	1353	1141	762	0	800	619	0	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	12.4	9.9	18.0	11.9	9.7	14.3	0.0	13.0	15.1	0.0	11.9
Incr Delay (d2), s/veh	2.9	2.0	0.0	2.8	1.4	0.0	0.6	0.0	1.3	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.0	0.1	1.6	3.5	0.0	1.7	0.0	2.1	0.2	0.0	0.7
LnGrp Delay(d),s/veh	21.0	14.3	9.9	20.8	13.4	9.7	14.9	0.0	14.3	15.1	0.0	12.2
LnGrp LOS	C	B	A	C	B	A	B		B	B		B
Approach Vol, veh/h		516			481			364			95	
Approach Delay, s/veh		15.9			15.4			14.6			12.7	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	17.5		14.9	8.3	17.7		14.9
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	5.0	9.3		6.8	4.9	8.5		8.0
Green Ext Time (p_c), s	0.1	3.1		0.4	0.1	2.8		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	312	47	60	237	20	38	52	60	10	30	35
Future Volume (veh/h)	64	312	47	60	237	20	38	52	60	10	30	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	97	473	29	91	359	12	58	79	55	15	45	14
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	169	650	552	117	595	502	79	196	136	27	221	69
Arrive On Green	0.10	0.35	0.35	0.07	0.32	0.32	0.04	0.19	0.19	0.02	0.16	0.16
Sat Flow, veh/h	1757	1845	1568	1757	1845	1556	1757	1009	703	1757	1341	417
Grp Volume(v), veh/h	97	473	29	91	359	12	58	0	134	15	0	59
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1556	1757	0	1712	1757	0	1759
Q Serve(g_s), s	2.6	10.8	0.6	2.5	7.9	0.3	1.6	0.0	3.3	0.4	0.0	1.4
Cycle Q Clear(g_c), s	2.6	10.8	0.6	2.5	7.9	0.3	1.6	0.0	3.3	0.4	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.24
Lane Grp Cap(c), veh/h	169	650	552	117	595	502	79	0	332	27	0	289
V/C Ratio(X)	0.57	0.73	0.05	0.78	0.60	0.02	0.74	0.00	0.40	0.57	0.00	0.20
Avail Cap(c_a), veh/h	727	1145	973	727	1145	966	727	0	850	727	0	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	13.6	10.3	22.2	13.8	11.2	22.8	0.0	17.0	23.6	0.0	17.5
Incr Delay (d2), s/veh	1.1	2.2	0.1	4.2	1.4	0.0	4.9	0.0	0.8	6.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.8	0.3	1.3	4.2	0.1	0.9	0.0	1.6	0.2	0.0	0.7
LnGrp Delay(d),s/veh	22.1	15.9	10.4	26.4	15.2	11.2	27.8	0.0	17.8	30.5	0.0	17.8
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		599			462			192			74	
Approach Delay, s/veh		16.6			17.3			20.8			20.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	22.0	6.2	12.4	9.1	20.6	4.7	13.9
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	12.8	3.6	3.4	4.6	9.9	2.4	5.3
Green Ext Time (p_c), s	0.1	3.9	0.0	0.2	0.1	2.9	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	660	350	659	580	51	1010	746	607	65	690	130
Future Volume (veh/h)	230	660	350	659	580	51	1010	746	607	65	690	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	319	917	461	915	806	68	1403	1036	517	90	958	39
Adj No. of Lanes	2	2	2	3	2	0	3	2	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	366	978	1282	918	1166	98	918	1060	468	331	1360	589
Arrive On Green	0.11	0.28	0.28	0.19	0.36	0.36	0.19	0.30	0.30	0.10	0.21	0.21
Sat Flow, veh/h	3408	3505	2760	4954	3267	276	4954	3505	1548	3408	6346	2748
Grp Volume(v), veh/h	319	917	461	915	432	442	1403	1036	517	90	958	39
Grp Sat Flow(s),veh/h/ln	1704	1752	1380	1651	1752	1790	1651	1752	1548	1704	1586	1374
Q Serve(g_s), s	14.9	41.4	17.4	29.9	34.1	34.1	30.0	47.4	49.0	4.0	22.6	1.8
Cycle Q Clear(g_c), s	14.9	41.4	17.4	29.9	34.1	34.1	30.0	47.4	49.0	4.0	22.6	1.8
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	978	1282	918	626	639	918	1060	468	331	1360	589
V/C Ratio(X)	0.87	0.94	0.36	1.00	0.69	0.69	1.53	0.98	1.10	0.27	0.70	0.07
Avail Cap(c_a), veh/h	632	996	1296	918	626	639	918	1060	468	632	1803	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.1	57.0	27.9	65.9	44.4	44.4	65.9	55.9	56.4	67.8	58.8	50.7
Incr Delay (d2), s/veh	2.8	15.6	0.2	28.8	3.2	3.2	243.1	22.2	72.9	0.2	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	22.1	6.7	16.0	17.0	17.4	34.3	26.1	30.4	1.9	10.0	0.7
LnGrp Delay(d),s/veh	74.0	72.6	28.0	94.6	47.7	47.6	309.0	78.1	129.3	67.9	59.9	50.7
LnGrp LOS	E	E	C	F	D	D	F	E	F	E	E	D
Approach Vol, veh/h		1697			1789			2956			1087	
Approach Delay, s/veh		60.7			71.7			196.7			60.3	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	51.2	35.0	40.7	22.4	63.8	20.7	55.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	31.9	43.4	32.0	24.6	16.9	36.1	6.0	51.0
Green Ext Time (p_c), s	0.0	1.8	0.0	9.3	0.5	3.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	116.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1218	50	10	1168	20	60	10	10	20	10	52
Future Volume (veh/h)	64	1218	50	10	1168	20	60	10	10	20	10	52
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	90	1715	69	14	1645	14	85	14	1	28	14	7
Adj No. of Lanes	1	3	0	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	116	2971	119	24	1913	836	110	97	7	43	23	11
Arrive On Green	0.07	0.60	0.60	0.01	0.55	0.55	0.06	0.06	0.06	0.02	0.02	0.02
Sat Flow, veh/h	1757	4967	200	1757	3505	1533	1757	1700	121	1757	1161	581
Grp Volume(v), veh/h	90	1159	625	14	1645	14	85	0	15	28	0	21
Grp Sat Flow(s),veh/h/ln	1757	1679	1809	1757	1752	1533	1757	0	1822	1757	0	1742
Q Serve(g_s), s	3.1	13.1	13.1	0.5	24.8	0.3	2.9	0.0	0.5	1.0	0.0	0.7
Cycle Q Clear(g_c), s	3.1	13.1	13.1	0.5	24.8	0.3	2.9	0.0	0.5	1.0	0.0	0.7
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.07	1.00		0.33
Lane Grp Cap(c), veh/h	116	2008	1082	24	1913	836	110	0	104	43	0	34
V/C Ratio(X)	0.77	0.58	0.58	0.58	0.86	0.02	0.78	0.00	0.14	0.65	0.00	0.62
Avail Cap(c_a), veh/h	683	2008	1082	683	1987	869	569	0	590	569	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	7.6	7.6	30.3	12.0	6.4	28.5	0.0	27.7	29.8	0.0	30.0
Incr Delay (d2), s/veh	4.1	0.5	0.9	7.8	4.1	0.0	4.4	0.0	0.2	5.8	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.1	6.7	0.3	13.0	0.1	1.5	0.0	0.2	0.5	0.0	0.4
LnGrp Delay(d),s/veh	32.5	8.1	8.6	38.0	16.1	6.4	32.9	0.0	27.9	35.7	0.0	36.6
LnGrp LOS	C	A	A	D	B	A	C		C	D		D
Approach Vol, veh/h		1874			1673			100			49	
Approach Delay, s/veh		9.4			16.2			32.1			36.1	
Approach LOS		A			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	42.2	8.4	5.8	8.6	39.0	6.0	8.1
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	24.0	35.0	20.0	20.0	24.0	35.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.5	15.1	4.9	2.7	5.1	26.8	3.0	2.5
Green Ext Time (p_c), s	0.0	14.7	0.1	0.0	0.1	6.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1128	40	174	1038	0	50	0	50	0	0	0
Future Volume (veh/h)	20	1128	40	174	1038	0	50	0	50	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	29	1611	26	249	1483	0	71	0	10	0	0	-13
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	57	2411	747	304	3119	971	204	165	138	3	0	280
Arrive On Green	0.03	0.48	0.48	0.17	0.62	0.00	0.06	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1560	1757	5036	1568	3408	1845	1542	1757	1845	0
Grp Volume(v), veh/h	29	1611	26	249	1483	0	71	0	10	0	-13	-13
Grp Sat Flow(s),veh/h/ln	1757	1679	1560	1757	1679	1568	1704	1845	1542	1757	1845	1568
Q Serve(g_s), s	0.9	13.6	0.5	7.6	8.8	0.0	1.1	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	13.6	0.5	7.6	8.8	0.0	1.1	0.0	0.3	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	57	2411	747	304	3119	971	204	165	138	3	0	0
V/C Ratio(X)	0.51	0.67	0.03	0.82	0.48	0.00	0.35	0.00	0.07	0.00	0.00	0.00
Avail Cap(c_a), veh/h	631	2624	813	631	3119	971	1408	795	665	631	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	26.5	11.1	7.7	22.2	5.7	0.0	25.1	0.0	23.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.7	0.0	2.1	0.2	0.0	0.4	0.0	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.4	0.2	3.8	4.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	29.1	11.8	7.7	24.3	5.9	0.0	25.5	0.0	23.3	0.0	0.0	0.0
LnGrp LOS	C	B	A	C	A		C		C			
Approach Vol, veh/h		1666			1732			81			-26	
Approach Delay, s/veh		12.1			8.5			25.2			0.0	
Approach LOS		B			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	31.9	7.8	1.7	6.3	39.8	0.0	9.6
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.6	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	9.6	15.6	3.1	0.0	2.9	10.8	0.0	2.3
Green Ext Time (p_c), s	0.2	10.2	0.1	0.0	0.0	12.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	697	40	10	670	21	70	0	10	33	10	107
Future Volume (veh/h)	166	697	40	10	670	21	70	0	10	33	10	107
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	241	1010	28	14	971	11	101	0	2	48	14	32
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	529	2287	712	117	1679	509	276	0	501	95	68	156
Arrive On Green	0.16	0.45	0.45	0.03	0.33	0.33	0.08	0.00	0.16	0.05	0.14	0.14
Sat Flow, veh/h	3408	5036	1567	3408	5036	1526	3514	0	3107	1757	499	1140
Grp Volume(v), veh/h	241	1010	28	14	971	11	101	0	2	48	0	46
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1526	1757	0	1553	1757	0	1638
Q Serve(g_s), s	4.1	8.7	0.6	0.3	10.1	0.3	1.7	0.0	0.0	1.7	0.0	1.6
Cycle Q Clear(g_c), s	4.1	8.7	0.6	0.3	10.1	0.3	1.7	0.0	0.0	1.7	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	529	2287	712	117	1679	509	276	0	501	95	0	224
V/C Ratio(X)	0.46	0.44	0.04	0.12	0.58	0.02	0.37	0.00	0.00	0.51	0.00	0.21
Avail Cap(c_a), veh/h	1074	2697	839	1074	2697	817	1107	0	979	553	0	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	11.8	9.6	29.7	17.5	14.2	27.8	0.0	22.3	29.2	0.0	24.3
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.2	0.5	0.0	0.3	0.0	0.0	1.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.1	0.3	0.1	4.7	0.1	0.9	0.0	0.0	0.9	0.0	0.8
LnGrp Delay(d),s/veh	24.6	12.0	9.7	29.9	17.9	14.2	28.1	0.0	22.3	30.8	0.0	25.0
LnGrp LOS	C	B	A	C	B	B	C		C	C		C
Approach Vol, veh/h		1279			996			103			94	
Approach Delay, s/veh		14.3			18.1			27.9			27.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	34.1	9.5	13.2	14.4	26.5	7.9	14.7
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.3	10.7	3.7	3.6	6.1	12.1	3.7	2.0
Green Ext Time (p_c), s	0.0	9.6	0.1	0.2	0.3	8.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	0	408	0	0	0	119	493	0	0	578	142
Future Volume (veh/h)	262	0	408	0	0	0	119	493	0	0	578	142
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	374	0	199	0	0	0	170	704	0	0	826	74
Adj No. of Lanes	2	0	2	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	599	0	617	3	3	0	545	2129	0	3	1252	557
Arrive On Green	0.17	0.00	0.20	0.00	0.00	0.00	0.16	0.61	0.00	0.00	0.36	0.36
Sat Flow, veh/h	3514	0	3136	1757	1845	0	3408	3597	0	1757	3505	1559
Grp Volume(v), veh/h	374	0	199	0	0	0	170	704	0	0	826	74
Grp Sat Flow(s),veh/h/ln	1757	0	1568	1757	1845	0	1704	1752	0	1757	1752	1559
Q Serve(g_s), s	5.8	0.0	3.2	0.0	0.0	0.0	2.6	5.8	0.0	0.0	11.6	1.9
Cycle Q Clear(g_c), s	5.8	0.0	3.2	0.0	0.0	0.0	2.6	5.8	0.0	0.0	11.6	1.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	599	0	617	3	3	0	545	2129	0	3	1252	557
V/C Ratio(X)	0.62	0.00	0.32	0.00	0.00	0.00	0.31	0.33	0.00	0.00	0.66	0.13
Avail Cap(c_a), veh/h	1803	0	1609	359	377	0	1743	2129	0	359	1793	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	20.2	0.0	0.0	0.0	21.8	5.7	0.0	0.0	15.9	12.7
Incr Delay (d2), s/veh	0.4	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	1.4	0.0	0.0	0.0	1.2	2.8	0.0	0.0	5.8	0.8
LnGrp Delay(d),s/veh	23.0	0.0	20.6	0.0	0.0	0.0	21.9	5.8	0.0	0.0	16.7	12.9
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		573			0			874			900	
Approach Delay, s/veh		22.2			0.0			8.9			16.4	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	17.3	14.7	26.6	15.3	2.0	0.0	41.3
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	12.0	* 30	30.0	30.0	30.1	12.0	12.0	30.0
Max Q Clear Time (g_c+I1), s	0.0	5.2	4.6	13.6	7.8	0.0	0.0	7.8
Green Ext Time (p_c), s	0.0	1.1	0.3	6.8	0.6	0.0	0.0	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	0	160	0	0	0	180	596	0	0	326	40
Future Volume (veh/h)	50	0	160	0	0	0	180	596	0	0	326	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	83	0	40	0	0	0	300	993	0	0	543	17
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	361	0	323	0	5	0	375	3223	0	0	1090	480
Arrive On Green	0.10	0.00	0.10	0.00	0.00	0.00	0.21	0.64	0.00	0.00	0.31	0.31
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1542
Grp Volume(v), veh/h	83	0	40	0	0	0	300	993	0	0	543	17
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1542
Q Serve(g_s), s	0.8	0.0	0.5	0.0	0.0	0.0	6.3	3.4	0.0	0.0	4.9	0.3
Cycle Q Clear(g_c), s	0.8	0.0	0.5	0.0	0.0	0.0	6.3	3.4	0.0	0.0	4.9	0.3
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	361	0	323	0	5	0	375	3223	0	0	1090	480
V/C Ratio(X)	0.23	0.00	0.12	0.00	0.00	0.00	0.80	0.31	0.00	0.00	0.50	0.04
Avail Cap(c_a), veh/h	2169	0	1936	0	1471	0	904	3885	0	0	2704	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	0.0	15.8	0.0	0.0	0.0	14.5	3.1	0.0	0.0	10.9	9.3
Incr Delay (d2), s/veh	0.5	0.0	0.2	0.0	0.0	0.0	1.5	0.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	0.0	0.0	0.0	3.2	1.6	0.0	0.0	2.4	0.1
LnGrp Delay(d),s/veh	16.5	0.0	16.1	0.0	0.0	0.0	16.0	3.2	0.0	0.0	11.4	9.4
LnGrp LOS	B		B				B	A			B	A
Approach Vol, veh/h		123			0			1293			560	
Approach Delay, s/veh		16.4			0.0			6.2			11.4	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.0	12.8	17.1		0.0		29.9
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		24.0	20.0	30.0		31.0		30.0
Max Q Clear Time (g_c+I1), s		2.8	8.3	6.9		0.0		5.4
Green Ext Time (p_c), s		0.5	0.3	4.8		0.0		9.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	110	90	130	78	50	864	90	53	609	90
Future Volume (veh/h)	200	140	110	90	130	78	50	864	90	53	609	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	197	38	127	183	90	70	1217	64	75	858	62
Adj No. of Lanes	2	1	1	2	1	0	2	2	1	1	2	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	341	427	357	183	216	106	128	1751	783	95	1810	807
Arrive On Green	0.10	0.23	0.23	0.05	0.19	0.19	0.04	0.50	0.50	0.05	0.52	0.52
Sat Flow, veh/h	3408	1845	1544	3408	1168	574	3408	3505	1566	1757	3505	1563
Grp Volume(v), veh/h	282	197	38	127	0	273	70	1217	64	75	858	62
Grp Sat Flow(s),veh/h/ln	1704	1845	1544	1704	0	1742	1704	1752	1566	1757	1752	1563
Q Serve(g_s), s	9.7	11.0	2.3	4.4	0.0	18.2	2.4	31.9	2.6	5.1	18.8	2.4
Cycle Q Clear(g_c), s	9.7	11.0	2.3	4.4	0.0	18.2	2.4	31.9	2.6	5.1	18.8	2.4
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	427	357	183	0	323	128	1751	783	95	1810	807
V/C Ratio(X)	0.83	0.46	0.11	0.69	0.00	0.85	0.55	0.69	0.08	0.79	0.47	0.08
Avail Cap(c_a), veh/h	440	538	450	383	0	479	327	1751	783	168	1810	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.00	0.94	0.75	0.75	0.75	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	39.7	36.3	55.8	0.0	47.2	56.7	23.0	15.7	56.1	18.6	14.6
Incr Delay (d2), s/veh	9.0	1.3	0.2	3.3	0.0	11.3	2.0	1.7	0.2	10.1	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.8	1.0	2.1	0.0	9.7	1.2	15.8	1.1	2.7	9.3	1.1
LnGrp Delay(d),s/veh	61.9	41.0	36.5	59.1	0.0	58.6	58.7	24.7	15.8	66.2	19.5	14.8
LnGrp LOS	E	D	D	E		E	E	C	B	E	B	B
Approach Vol, veh/h		517			400			1351			995	
Approach Delay, s/veh		52.1			58.7			26.1			22.7	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	32.8	9.0	67.3	16.5	27.2	11.0	65.3
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.5	35.0	11.5	40.7	15.5	33.0	11.5	40.7
Max Q Clear Time (g_c+I1), s	6.4	13.0	4.4	20.8	11.7	20.2	7.1	33.9
Green Ext Time (p_c), s	0.1	1.9	0.1	7.8	0.3	1.9	0.0	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	180	23	10	130	10	38	30	10	20	40	90
Future Volume (veh/h)	60	180	23	10	130	10	38	30	10	20	40	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	105	316	36	18	228	6	67	53	7	35	70	32
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	534	61	32	500	423	94	206	27	57	201	171
Arrive On Green	0.08	0.33	0.33	0.02	0.27	0.27	0.05	0.13	0.13	0.03	0.11	0.11
Sat Flow, veh/h	1757	1623	185	1757	1845	1559	1757	1589	210	1757	1845	1568
Grp Volume(v), veh/h	105	0	352	18	228	6	67	0	60	35	70	32
Grp Sat Flow(s),veh/h/ln	1757	0	1807	1757	1845	1559	1757	0	1799	1757	1845	1568
Q Serve(g_s), s	2.2	0.0	6.1	0.4	3.9	0.1	1.4	0.0	1.1	0.7	1.3	0.7
Cycle Q Clear(g_c), s	2.2	0.0	6.1	0.4	3.9	0.1	1.4	0.0	1.1	0.7	1.3	0.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	595	32	500	423	94	0	234	57	201	171
V/C Ratio(X)	0.78	0.00	0.59	0.56	0.46	0.01	0.71	0.00	0.26	0.61	0.35	0.19
Avail Cap(c_a), veh/h	931	0	1437	931	1467	1240	931	0	954	931	978	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	10.5	18.4	11.4	10.1	17.6	0.0	14.8	18.0	15.6	15.3
Incr Delay (d2), s/veh	3.8	0.0	1.3	5.6	0.9	0.0	3.7	0.0	0.8	3.9	1.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.3	0.2	2.1	0.0	0.8	0.0	0.6	0.4	0.7	0.3
LnGrp Delay(d),s/veh	20.9	0.0	11.9	24.0	12.4	10.1	21.3	0.0	15.6	21.9	17.0	16.0
LnGrp LOS	C		B	C	B	B	C		B	C	B	B
Approach Vol, veh/h		457			252			127			137	
Approach Delay, s/veh		14.0			13.1			18.6			18.0	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	17.4	6.5	8.6	7.4	15.2	5.7	9.4
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.4	8.1	3.4	3.3	4.2	5.9	2.7	3.1
Green Ext Time (p_c), s	0.0	2.8	0.1	0.5	0.1	1.7	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	140	110	80	100	40	30	104	100	50	60	40
Future Volume (veh/h)	40	140	110	80	100	40	30	104	100	50	60	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	74	259	39	148	185	18	56	193	157	93	111	61
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	95	706	314	189	894	399	70	299	243	120	374	205
Arrive On Green	0.05	0.20	0.20	0.11	0.26	0.26	0.04	0.32	0.32	0.07	0.35	0.35
Sat Flow, veh/h	1757	3505	1556	1757	3505	1562	1757	927	754	1757	1065	585
Grp Volume(v), veh/h	74	259	39	148	185	18	56	0	350	93	0	172
Grp Sat Flow(s),veh/h/ln	1757	1752	1556	1757	1752	1562	1757	0	1681	1757	0	1650
Q Serve(g_s), s	2.6	3.9	1.3	5.1	2.6	0.5	1.9	0.0	11.0	3.2	0.0	4.7
Cycle Q Clear(g_c), s	2.6	3.9	1.3	5.1	2.6	0.5	1.9	0.0	11.0	3.2	0.0	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		0.35
Lane Grp Cap(c), veh/h	95	706	314	189	894	399	70	0	542	120	0	579
V/C Ratio(X)	0.78	0.37	0.12	0.78	0.21	0.05	0.80	0.00	0.65	0.77	0.00	0.30
Avail Cap(c_a), veh/h	570	1705	757	570	1705	760	570	0	654	570	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	21.2	20.2	26.8	18.1	17.3	29.3	0.0	17.9	28.2	0.0	14.5
Incr Delay (d2), s/veh	5.2	0.5	0.3	2.7	0.2	0.1	7.4	0.0	2.1	3.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.0	0.6	2.6	1.3	0.2	1.1	0.0	5.4	1.7	0.0	2.2
LnGrp Delay(d),s/veh	34.0	21.7	20.4	29.5	18.2	17.4	36.8	0.0	20.0	32.2	0.0	14.9
LnGrp LOS	C	C	C	C	B	B	D		C	C		B
Approach Vol, veh/h		372			351			406			265	
Approach Delay, s/veh		24.0			22.9			22.3			21.0	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	17.4	7.0	26.1	7.8	20.7	8.7	24.4
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.6	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	7.1	5.9	3.9	6.7	4.6	4.6	5.2	13.0
Green Ext Time (p_c), s	0.1	2.3	0.0	1.2	0.1	1.6	0.1	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	84	98	110	66	30	174	949	122	40	542	117
Future Volume (veh/h)	190	84	98	110	66	30	174	949	122	40	542	117
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	279	124	31	162	97	7	256	1396	83	59	797	54
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	454	303	438	440	295	245	453	1852	574	166	1624	502
Arrive On Green	0.13	0.16	0.16	0.13	0.16	0.16	0.13	0.37	0.37	0.09	0.32	0.32
Sat Flow, veh/h	3408	1845	2665	3408	1845	1533	3408	5036	1562	1757	5036	1558
Grp Volume(v), veh/h	279	124	31	162	97	7	256	1396	83	59	797	54
Grp Sat Flow(s),veh/h/ln	1704	1845	1333	1704	1845	1533	1704	1679	1562	1757	1679	1558
Q Serve(g_s), s	5.8	4.5	0.7	3.3	3.5	0.3	5.3	18.1	2.7	2.4	9.5	1.8
Cycle Q Clear(g_c), s	5.8	4.5	0.7	3.3	3.5	0.3	5.3	18.1	2.7	2.4	9.5	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	303	438	440	295	245	453	1852	574	166	1624	502
V/C Ratio(X)	0.61	0.41	0.07	0.37	0.33	0.03	0.56	0.75	0.14	0.36	0.49	0.11
Avail Cap(c_a), veh/h	911	740	1069	911	740	615	911	2019	626	470	1952	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	28.0	26.4	29.8	27.9	26.5	30.4	20.7	15.8	31.7	20.4	17.8
Incr Delay (d2), s/veh	0.5	1.3	0.1	0.2	0.9	0.1	0.4	1.7	0.2	0.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.4	0.3	1.5	1.9	0.1	2.5	8.7	1.2	1.2	4.5	0.8
LnGrp Delay(d),s/veh	31.1	29.3	26.5	30.0	28.8	26.6	30.8	22.4	16.0	32.2	20.7	17.9
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	C	B
Approach Vol, veh/h		434			266			1735			910	
Approach Delay, s/veh		30.3			29.5			23.3			21.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	17.3	14.5	29.4	14.0	17.0	11.1	32.8
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	20.0	30.0	20.0	29.0	20.0	30.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.3	6.5	7.3	11.5	7.8	5.5	4.4	20.1
Green Ext Time (p_c), s	0.2	1.0	0.4	6.6	0.4	0.7	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	218	18	21	327	10	27	10	30	10	10	20
Future Volume (veh/h)	30	218	18	21	327	10	27	10	30	10	10	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	330	15	32	495	7	41	15	6	15	15	3
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	742	611	53	725	612	64	114	46	27	105	21
Arrive On Green	0.04	0.40	0.40	0.03	0.39	0.39	0.04	0.09	0.09	0.02	0.07	0.07
Sat Flow, veh/h	1757	1845	1520	1757	1845	1558	1757	1246	498	1757	1489	298
Grp Volume(v), veh/h	45	330	15	32	495	7	41	0	21	15	0	18
Grp Sat Flow(s),veh/h/ln	1757	1845	1520	1757	1845	1558	1757	0	1745	1757	0	1787
Q Serve(g_s), s	1.0	5.2	0.2	0.7	8.9	0.1	0.9	0.0	0.4	0.3	0.0	0.4
Cycle Q Clear(g_c), s	1.0	5.2	0.2	0.7	8.9	0.1	0.9	0.0	0.4	0.3	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	69	742	611	53	725	612	64	0	160	27	0	126
V/C Ratio(X)	0.65	0.44	0.02	0.61	0.68	0.01	0.64	0.00	0.13	0.56	0.00	0.14
Avail Cap(c_a), veh/h	1050	1838	1514	1050	1838	1552	1050	0	1173	1050	0	1246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	8.7	7.2	19.2	10.1	7.4	19.1	0.0	16.8	19.6	0.0	17.5
Incr Delay (d2), s/veh	3.8	0.6	0.0	4.2	1.6	0.0	3.9	0.0	0.1	6.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	0.1	0.4	4.7	0.0	0.5	0.0	0.2	0.2	0.0	0.2
LnGrp Delay(d),s/veh	22.8	9.3	7.3	23.4	11.7	7.4	23.0	0.0	16.9	26.1	0.0	17.7
LnGrp LOS	C	A	A	C	B	A	C		B	C		B
Approach Vol, veh/h		390			534			62			33	
Approach Delay, s/veh		10.8			12.4			20.9			21.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	21.2	6.0	7.3	6.1	20.8	5.1	8.2
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	40.0	24.0	28.0	24.0	40.0	24.0	27.0
Max Q Clear Time (g_c+I1), s	2.7	7.2	2.9	2.4	3.0	10.9	2.3	2.4
Green Ext Time (p_c), s	0.0	3.1	0.0	0.0	0.0	4.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	20	53	31	10	63
Future Vol, veh/h	30	20	53	31	10	63
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	46	31	82	48	15	97
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	7.7	7.9
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	60%	14%
Vol Thru, %	63%	0%	86%
Vol Right, %	37%	40%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	84	50	73
LT Vol	0	30	10
Through Vol	53	0	63
RT Vol	31	20	0
Lane Flow Rate	129	77	112
Geometry Grp	1	1	1
Degree of Util (X)	0.142	0.093	0.131
Departure Headway (Hd)	3.949	4.351	4.212
Convergence, Y/N	Yes	Yes	Yes
Cap	896	828	841
Service Time	2.027	2.351	2.286
HCM Lane V/C Ratio	0.144	0.093	0.133
HCM Control Delay	7.7	7.8	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	660	350	659	580	51	1010	746	607	65	690	130
Future Volume (vph)	230	660	350	659	580	51	1010	746	607	65	690	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.95	0.88	0.94	0.95		0.94	0.95	1.00	0.97	0.86	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	3505	2760	4942	3457		4942	3505	1548	3400	6346	2718
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	3505	2760	4942	3457		4942	3505	1548	3400	6346	2718
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	319	917	486	915	806	71	1403	1036	843	90	958	181
RTOR Reduction (vph)	0	0	25	0	3	0	0	0	327	0	0	141
Lane Group Flow (vph)	319	917	461	915	874	0	1403	1036	516	90	958	40
Confl. Peds. (#/hr)						7						3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	2 3	1	6		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	20.0	46.0	82.0	30.0	56.0		30.0	50.4	50.4	16.0	36.4	36.4
Effective Green, g (s)	20.0	46.0	82.0	30.0	56.0		30.0	50.4	50.4	16.0	36.4	36.4
Actuated g/C Ratio	0.12	0.28	0.50	0.18	0.34		0.18	0.31	0.31	0.10	0.22	0.22
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	413	980	1376	901	1177		901	1074	474	330	1405	601
v/s Ratio Prot	0.09	c0.26	0.17	c0.19	0.25		c0.28	0.30		0.03	0.15	
v/s Ratio Perm									c0.33			0.01
v/c Ratio	0.77	0.94	0.33	1.02	0.74		1.56	0.96	1.09	0.27	0.68	0.07
Uniform Delay, d1	70.0	57.8	24.8	67.2	47.8		67.2	56.1	57.0	68.8	58.7	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	15.5	0.1	33.9	2.6		256.2	19.4	67.7	0.2	1.5	0.1
Delay (s)	78.0	73.2	24.9	101.1	50.4		323.4	75.5	124.7	69.0	60.2	50.6
Level of Service	E	E	C	F	D		F	E	F	E	E	D
Approach Delay (s)		60.5			76.3			194.1			59.4	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	118.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	164.4	Sum of lost time (s)	22.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	220	70	270	210	30	30	520	80	60	1250	140
Future Volume (veh/h)	120	220	70	270	210	30	30	520	80	60	1250	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	256	15	314	244	32	35	605	46	70	1453	103
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	308	256	369	290	38	76	2674	815	96	2732	825
Arrive On Green	0.09	0.17	0.17	0.11	0.18	0.18	0.04	0.53	0.53	0.05	0.54	0.54
Sat Flow, veh/h	1757	1845	1533	3408	1595	209	1757	5036	1536	1757	5036	1521
Grp Volume(v), veh/h	140	256	15	314	0	276	35	605	46	70	1453	103
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1704	0	1804	1757	1679	1536	1757	1679	1521
Q Serve(g_s), s	10.7	18.3	1.1	12.3	0.0	20.1	2.6	8.7	2.0	5.3	25.2	4.5
Cycle Q Clear(g_c), s	10.7	18.3	1.1	12.3	0.0	20.1	2.6	8.7	2.0	5.3	25.2	4.5
Prop In Lane	1.00		1.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	308	256	369	0	328	76	2674	815	96	2732	825
V/C Ratio(X)	0.85	0.83	0.06	0.85	0.00	0.84	0.46	0.23	0.06	0.73	0.53	0.12
Avail Cap(c_a), veh/h	252	507	422	489	0	496	103	2674	815	161	2732	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.00	0.59	0.98	0.98	0.98	0.61	0.61	0.61
Uniform Delay (d), s/veh	60.7	54.8	47.6	59.6	0.0	53.8	63.5	17.0	15.4	63.3	20.0	15.3
Incr Delay (d2), s/veh	13.2	4.5	0.1	6.1	0.0	4.1	3.1	0.2	0.1	4.8	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	9.7	0.5	6.1	0.0	10.4	1.3	4.1	0.9	2.7	11.8	1.9
LnGrp Delay(d),s/veh	73.9	59.3	47.7	65.6	0.0	57.9	66.7	17.2	15.5	68.0	20.5	15.5
LnGrp LOS	E	E	D	E		E	E	B	B	E	C	B
Approach Vol, veh/h		411			590			686			1626	
Approach Delay, s/veh		63.8			62.0			19.6			22.2	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	27.3	10.4	79.1	17.2	29.3	11.9	77.5
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	37.4	8.0	52.2	19.5	37.4	12.5	* 48
Max Q Clear Time (g_c+I1), s	14.3	20.3	4.6	27.2	12.7	22.1	7.3	10.7
Green Ext Time (p_c), s	0.4	1.0	0.0	15.9	0.1	1.1	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	250	10	80	400	30	20	60	40	40	110	100
Future Volume (veh/h)	80	250	10	80	400	30	20	60	40	40	110	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	338	13	108	541	15	27	81	35	54	149	109
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	677	26	140	711	590	43	209	90	71	189	138
Arrive On Green	0.08	0.38	0.38	0.08	0.39	0.39	0.02	0.17	0.17	0.04	0.19	0.19
Sat Flow, veh/h	1757	1763	68	1757	1845	1531	1757	1198	518	1757	991	725
Grp Volume(v), veh/h	108	0	351	108	541	15	27	0	116	54	0	258
Grp Sat Flow(s),veh/h/ln	1757	0	1830	1757	1845	1531	1757	0	1716	1757	0	1717
Q Serve(g_s), s	3.5	0.0	8.4	3.5	14.7	0.3	0.9	0.0	3.4	1.8	0.0	8.2
Cycle Q Clear(g_c), s	3.5	0.0	8.4	3.5	14.7	0.3	0.9	0.0	3.4	1.8	0.0	8.2
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.30	1.00		0.42
Lane Grp Cap(c), veh/h	138	0	703	140	711	590	43	0	299	71	0	327
V/C Ratio(X)	0.78	0.00	0.50	0.77	0.76	0.03	0.63	0.00	0.39	0.76	0.00	0.79
Avail Cap(c_a), veh/h	321	0	1495	733	1506	1250	229	0	984	229	0	716
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	13.5	26.0	15.4	11.0	27.8	0.0	21.0	27.4	0.0	22.2
Incr Delay (d2), s/veh	3.7	0.0	0.8	3.4	2.4	0.0	5.6	0.0	0.3	6.3	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	4.3	1.8	7.8	0.2	0.5	0.0	1.6	1.0	0.0	4.0
LnGrp Delay(d),s/veh	29.7	0.0	14.3	29.3	17.8	11.0	33.4	0.0	21.3	33.6	0.0	23.8
LnGrp LOS	C		B	C	B	B	C		C	C		C
Approach Vol, veh/h		459			664			143			312	
Approach Delay, s/veh		17.9			19.5			23.6			25.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	27.1	5.9	15.5	9.0	27.2	6.8	14.5
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	5.5	10.4	2.9	10.2	5.5	16.7	3.8	5.4
Green Ext Time (p_c), s	0.1	3.3	0.0	0.9	0.0	5.5	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	310	0	0	370	20	0	0	0	30	0	110
Future Volume (veh/h)	50	310	0	0	370	20	0	0	0	30	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	68	419	0	0	500	13	0	0	0	41	0	26
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	1115	948	5	766	644	0	209	0	403	0	169
Arrive On Green	0.06	0.60	0.00	0.00	0.42	0.42	0.00	0.00	0.00	0.11	0.00	0.11
Sat Flow, veh/h	1757	1845	1568	1757	1845	1551	0	1845	0	1664	0	1489
Grp Volume(v), veh/h	68	419	0	0	500	13	0	0	0	41	0	26
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1551	0	1845	0	1664	0	1489
Q Serve(g_s), s	1.3	3.9	0.0	0.0	7.3	0.2	0.0	0.0	0.0	0.8	0.0	0.5
Cycle Q Clear(g_c), s	1.3	3.9	0.0	0.0	7.3	0.2	0.0	0.0	0.0	0.8	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	1115	948	5	766	644	0	209	0	403	0	169
V/C Ratio(X)	0.69	0.38	0.00	0.00	0.65	0.02	0.00	0.00	0.00	0.10	0.00	0.15
Avail Cap(c_a), veh/h	1043	1642	1396	1043	1642	1381	0	1095	0	1201	0	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	3.4	0.0	0.0	7.9	5.8	0.0	0.0	0.0	13.6	0.0	13.5
Incr Delay (d2), s/veh	3.2	0.3	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	0.0	0.0	3.9	0.1	0.0	0.0	0.0	0.4	0.0	0.2
LnGrp Delay(d),s/veh	18.9	3.7	0.0	0.0	9.3	5.8	0.0	0.0	0.0	13.7	0.0	14.1
LnGrp LOS	B	A			A	A				B		B
Approach Vol, veh/h		487			513			0			67	
Approach Delay, s/veh		5.8			9.2			0.0			13.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	25.4		8.3	6.4	19.0		8.3
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	10.3	5.9		2.8	3.3	9.3		0.0
Green Ext Time (p_c), s	0.0	3.7		0.3	0.1	4.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	260	50	90	350	30	40	80	60	20	70	50
Future Volume (veh/h)	40	260	50	90	350	30	40	80	60	20	70	50
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.95	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	58	377	26	130	507	15	58	116	65	29	101	52
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	118	580	482	168	633	516	73	286	160	45	270	139
Arrive On Green	0.07	0.31	0.31	0.10	0.34	0.34	0.04	0.26	0.26	0.03	0.25	0.25
Sat Flow, veh/h	1757	1845	1532	1757	1845	1505	1757	1091	611	1757	1094	563
Grp Volume(v), veh/h	58	377	26	130	507	15	58	0	181	29	0	153
Grp Sat Flow(s),veh/h/ln	1757	1845	1532	1757	1845	1505	1757	0	1702	1757	0	1657
Q Serve(g_s), s	1.9	10.5	0.7	4.3	14.8	0.4	2.0	0.0	5.2	1.0	0.0	4.6
Cycle Q Clear(g_c), s	1.9	10.5	0.7	4.3	14.8	0.4	2.0	0.0	5.2	1.0	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.34
Lane Grp Cap(c), veh/h	118	580	482	168	633	516	73	0	447	45	0	408
V/C Ratio(X)	0.49	0.65	0.05	0.78	0.80	0.03	0.80	0.00	0.41	0.65	0.00	0.37
Avail Cap(c_a), veh/h	590	928	771	590	928	757	590	0	685	590	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	17.6	14.2	26.3	17.7	13.0	28.3	0.0	18.1	28.8	0.0	18.6
Incr Delay (d2), s/veh	1.2	1.8	0.1	2.9	4.1	0.0	7.2	0.0	0.6	5.6	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.6	0.3	2.2	8.2	0.2	1.1	0.0	2.5	0.5	0.0	2.1
LnGrp Delay(d),s/veh	28.0	19.3	14.3	29.2	21.8	13.0	35.5	0.0	18.7	34.4	0.0	19.2
LnGrp LOS	C	B	B	C	C	B	D		B	C		B
Approach Vol, veh/h		461			652			239			182	
Approach Delay, s/veh		20.1			23.1			22.8			21.6	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	23.8	6.5	19.2	8.5	25.4	5.5	20.1
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	6.3	12.5	4.0	6.6	3.9	16.8	3.0	7.2
Green Ext Time (p_c), s	0.1	3.0	0.0	0.8	0.0	3.6	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	22.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	800	280	720	1420	60	690	530	810	40	1350	170
Future Volume (veh/h)	120	800	280	720	1420	60	690	530	810	40	1350	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	128	851	268	766	1511	61	734	564	530	43	1436	79
Adj No. of Lanes	2	4	1	3	3	0	3	4	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	355	1489	621	845	1493	60	817	2303	569	299	1815	769
Arrive On Green	0.10	0.23	0.23	0.17	0.30	0.30	0.16	0.36	0.36	0.09	0.29	0.29
Sat Flow, veh/h	3408	6346	1546	4954	4961	200	4954	6346	1568	3408	6346	2688
Grp Volume(v), veh/h	128	851	268	766	1022	550	734	564	530	43	1436	79
Grp Sat Flow(s),veh/h/ln	1704	1586	1546	1651	1679	1804	1651	1586	1568	1704	1586	1344
Q Serve(g_s), s	5.3	18.1	19.2	23.2	46.0	46.0	22.2	9.5	49.7	1.8	31.9	3.3
Cycle Q Clear(g_c), s	5.3	18.1	19.2	23.2	46.0	46.0	22.2	9.5	49.7	1.8	31.9	3.3
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	1489	621	845	1011	543	817	2303	569	299	1815	769
V/C Ratio(X)	0.36	0.57	0.43	0.91	1.01	1.01	0.90	0.24	0.93	0.14	0.79	0.10
Avail Cap(c_a), veh/h	669	1910	724	973	1011	543	973	2303	569	669	1910	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	51.7	33.3	62.2	53.4	53.4	62.6	34.0	46.8	64.4	50.4	40.1
Incr Delay (d2), s/veh	0.2	0.3	0.5	10.1	31.2	41.6	9.0	0.1	22.5	0.1	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.0	8.3	11.4	25.6	29.1	10.8	4.2	25.1	0.8	14.3	1.2
LnGrp Delay(d),s/veh	63.9	52.0	33.8	72.3	84.7	95.0	71.5	34.1	69.3	64.5	52.8	40.2
LnGrp LOS	E	D	C	E	F	F	E	C	E	E	D	D
Approach Vol, veh/h		1247			2338			1828			1558	
Approach Delay, s/veh		49.3			83.0			59.3			52.4	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.1	41.9	30.2	49.7	20.9	52.0	18.4	61.5
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	25.2	21.2	24.2	33.9	7.3	48.0	3.8	51.7
Green Ext Time (p_c), s	0.9	6.8	1.0	9.0	0.2	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	64.0
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1570	40	10	1860	30	30	10	10	70	10	290
Future Volume (veh/h)	60	1570	40	10	1860	30	30	10	10	70	10	290
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	68	1784	26	11	2114	18	34	11	1	80	11	236
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	2903	885	19	2708	824	44	253	23	102	13	278
Arrive On Green	0.05	0.58	0.58	0.01	0.54	0.54	0.03	0.15	0.15	0.06	0.18	0.18
Sat Flow, veh/h	1757	5036	1535	1757	5036	1533	1757	1666	151	1757	70	1508
Grp Volume(v), veh/h	68	1784	26	11	2114	18	34	0	12	80	0	247
Grp Sat Flow(s),veh/h/ln	1757	1679	1535	1757	1679	1533	1757	0	1818	1757	0	1579
Q Serve(g_s), s	3.6	21.6	0.7	0.6	31.1	0.5	1.8	0.0	0.5	4.2	0.0	14.1
Cycle Q Clear(g_c), s	3.6	21.6	0.7	0.6	31.1	0.5	1.8	0.0	0.5	4.2	0.0	14.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.96
Lane Grp Cap(c), veh/h	87	2903	885	19	2708	824	44	0	276	102	0	291
V/C Ratio(X)	0.78	0.61	0.03	0.59	0.78	0.02	0.77	0.00	0.04	0.78	0.00	0.85
Avail Cap(c_a), veh/h	106	2956	901	76	2869	873	127	0	801	123	0	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.7	12.9	8.5	45.8	17.1	10.1	45.1	0.0	33.7	43.2	0.0	36.7
Incr Delay (d2), s/veh	21.1	0.4	0.0	10.5	1.5	0.0	10.0	0.0	0.0	19.3	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	10.0	0.3	0.3	14.7	0.2	1.0	0.0	0.3	2.6	0.0	6.3
LnGrp Delay(d),s/veh	64.8	13.4	8.5	56.3	18.6	10.1	55.1	0.0	33.7	62.5	0.0	39.3
LnGrp LOS	E	B	A	E	B	B	E		C	E		D
Approach Vol, veh/h		1878			2143			46			327	
Approach Delay, s/veh		15.2			18.7			49.5			45.0	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	58.9	6.8	21.8	9.1	55.3	9.9	18.7
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	4.0	54.6	6.7	40.8	5.6	53.0	6.5	41.0
Max Q Clear Time (g_c+I1), s	2.6	23.6	3.8	16.1	5.6	33.1	6.2	2.5
Green Ext Time (p_c), s	0.0	21.0	0.0	1.1	0.0	16.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1530	50	140	1840	0	40	10	40	10	0	10
Future Volume (veh/h)	10	1530	50	140	1840	0	40	10	40	10	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	1739	29	159	2091	0	45	11	4	11	0	1
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	2357	716	203	2868	893	151	144	122	25	0	74
Arrive On Green	0.01	0.47	0.47	0.12	0.57	0.00	0.04	0.08	0.08	0.01	0.00	0.05
Sat Flow, veh/h	1757	5036	1530	1757	5036	1568	3408	1845	1552	1757	0	1546
Grp Volume(v), veh/h	11	1739	29	159	2091	0	45	11	4	11	0	1
Grp Sat Flow(s),veh/h/ln	1757	1679	1530	1757	1679	1568	1704	1845	1552	1757	0	1546
Q Serve(g_s), s	0.4	16.4	0.6	5.1	17.8	0.0	0.7	0.3	0.1	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.4	16.4	0.6	5.1	17.8	0.0	0.7	0.3	0.1	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	25	2357	716	203	2868	893	151	144	122	25	0	74
V/C Ratio(X)	0.45	0.74	0.04	0.78	0.73	0.00	0.30	0.08	0.03	0.45	0.00	0.01
Avail Cap(c_a), veh/h	603	2505	761	603	2868	893	1345	759	639	603	0	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	12.6	8.4	25.1	9.2	0.0	27.0	24.9	24.8	28.5	0.0	26.4
Incr Delay (d2), s/veh	4.7	1.2	0.0	2.5	1.0	0.0	0.4	0.1	0.0	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.7	0.3	2.6	8.4	0.0	0.4	0.2	0.1	0.2	0.0	0.0
LnGrp Delay(d),s/veh	33.2	13.8	8.4	27.6	10.3	0.0	27.4	25.0	24.9	33.2	0.0	26.5
LnGrp LOS	C	B	A	C	B		C	C	C	C		C
Approach Vol, veh/h		1779			2250			60			12	
Approach Delay, s/veh		13.9			11.5			26.8			32.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	32.6	7.1	7.4	5.3	38.5	5.3	9.2
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	7.1	18.4	2.7	2.0	2.4	19.8	2.4	2.3
Green Ext Time (p_c), s	0.2	8.8	0.0	0.0	0.0	8.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	550	110	10	1250	20	30	0	10	40	10	380
Future Volume (veh/h)	80	550	110	10	1250	20	30	0	10	40	10	380
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	92	632	63	11	1437	10	34	0	3	46	11	96
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	407	2550	780	94	2087	634	146	0	445	89	25	219
Arrive On Green	0.12	0.51	0.51	0.03	0.41	0.41	0.04	0.00	0.15	0.05	0.15	0.15
Sat Flow, veh/h	3408	5036	1541	3408	5036	1530	3514	0	3068	1757	163	1421
Grp Volume(v), veh/h	92	632	63	11	1437	10	34	0	3	46	0	107
Grp Sat Flow(s),veh/h/ln	1704	1679	1541	1704	1679	1530	1757	0	1534	1757	0	1584
Q Serve(g_s), s	1.7	4.9	1.5	0.2	16.3	0.3	0.7	0.0	0.1	1.8	0.0	4.3
Cycle Q Clear(g_c), s	1.7	4.9	1.5	0.2	16.3	0.3	0.7	0.0	0.1	1.8	0.0	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	407	2550	780	94	2087	634	146	0	445	89	0	244
V/C Ratio(X)	0.23	0.25	0.08	0.12	0.69	0.02	0.23	0.00	0.01	0.52	0.00	0.44
Avail Cap(c_a), veh/h	980	2550	780	980	2462	748	1010	0	882	505	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.7	9.7	8.8	33.0	16.7	12.0	32.3	0.0	25.4	32.2	0.0	26.7
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.2	0.8	0.0	0.3	0.0	0.0	1.7	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	0.6	0.1	7.6	0.1	0.3	0.0	0.0	0.9	0.0	2.0
LnGrp Delay(d),s/veh	27.8	9.8	8.9	33.2	17.5	12.0	32.6	0.0	25.5	33.9	0.0	28.4
LnGrp LOS	C	A	A	C	B	B	C		C	C		C
Approach Vol, veh/h		787			1458			37			153	
Approach Delay, s/veh		11.8			17.6			32.0			30.1	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.4	40.5	7.4	15.2	12.8	34.1	8.0	14.6
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	6.9	2.7	6.3	3.7	18.3	3.8	2.1
Green Ext Time (p_c), s	0.0	6.3	0.0	0.5	0.1	10.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1080	340	290	700	620	450	560	400	530	1370	220
Future Volume (veh/h)	120	1080	340	290	700	620	450	560	400	530	1370	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	128	1149	100	309	745	416	479	596	185	564	1457	95
Adj No. of Lanes	2	3	2	3	3	1	3	3	2	3	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	291	1382	757	424	1326	413	512	1655	895	662	1807	553
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.33	0.33	0.13	0.36	0.36
Sat Flow, veh/h	3408	5036	2760	4954	5036	1568	4954	5036	2725	4954	5036	1540
Grp Volume(v), veh/h	128	1149	100	309	745	416	479	596	185	564	1457	95
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1651	1679	1568	1651	1679	1362	1651	1679	1540
Q Serve(g_s), s	4.2	25.1	3.2	7.1	15.0	30.8	11.2	10.5	5.7	13.0	30.5	4.9
Cycle Q Clear(g_c), s	4.2	25.1	3.2	7.1	15.0	30.8	11.2	10.5	5.7	13.0	30.5	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	1382	757	424	1326	413	512	1655	895	662	1807	553
V/C Ratio(X)	0.44	0.83	0.13	0.73	0.56	1.01	0.93	0.36	0.21	0.85	0.81	0.17
Avail Cap(c_a), veh/h	291	1404	769	424	1326	413	512	1655	895	839	1937	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	39.9	31.9	52.2	37.3	43.1	52.0	29.9	28.3	49.5	33.8	25.6
Incr Delay (d2), s/veh	0.4	4.5	0.1	5.5	0.3	46.2	24.2	0.2	0.2	5.7	2.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	12.2	1.2	3.5	6.9	18.6	6.3	4.9	2.2	6.3	14.6	2.1
LnGrp Delay(d),s/veh	51.2	44.4	32.1	57.7	37.6	89.3	76.3	30.1	28.4	55.2	36.5	25.8
LnGrp LOS	D	D	C	E	D	F	E	C	C	E	D	C
Approach Vol, veh/h		1377			1470			1260			2116	
Approach Delay, s/veh		44.2			56.5			47.4			41.0	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.9	17.4	47.7	15.3	36.6	20.9	44.1
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	10.0	* 33	12.1	45.0	10.0	30.8	19.8	37.3
Max Q Clear Time (g_c+I1), s	9.1	27.1	13.2	32.5	6.2	32.8	15.0	12.5
Green Ext Time (p_c), s	0.1	4.0	0.0	9.1	0.1	0.0	0.6	6.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.6
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	270	0	0	0	390	790	0	0	1160	140
Future Volume (veh/h)	60	0	270	0	0	0	390	790	0	0	1160	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	77	0	31	0	0	0	500	1013	0	0	1487	126
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	195	0	172	0	2	0	462	4141	0	0	1767	778
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.00	0.26	0.82	0.00	0.00	0.50	0.50
Sat Flow, veh/h	3514	0	3102	0	1845	0	1757	5202	0	0	3597	1542
Grp Volume(v), veh/h	77	0	31	0	0	0	500	1013	0	0	1487	126
Grp Sat Flow(s),veh/h/ln	1757	0	1551	0	1845	0	1757	1679	0	0	1752	1542
Q Serve(g_s), s	1.7	0.0	0.8	0.0	0.0	0.0	21.5	3.7	0.0	0.0	29.9	3.6
Cycle Q Clear(g_c), s	1.7	0.0	0.8	0.0	0.0	0.0	21.5	3.7	0.0	0.0	29.9	3.6
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	195	0	172	0	2	0	462	4141	0	0	1767	778
V/C Ratio(X)	0.40	0.00	0.18	0.00	0.00	0.00	1.08	0.24	0.00	0.00	0.84	0.16
Avail Cap(c_a), veh/h	1418	0	1252	0	699	0	462	4312	0	0	1886	830
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	0.0	36.8	0.0	0.0	0.0	30.1	1.6	0.0	0.0	17.5	10.9
Incr Delay (d2), s/veh	1.8	0.0	0.7	0.0	0.0	0.0	65.8	0.0	0.0	0.0	3.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	0.0	0.0	0.0	18.7	1.7	0.0	0.0	15.1	1.6
LnGrp Delay(d),s/veh	39.1	0.0	37.5	0.0	0.0	0.0	95.9	1.7	0.0	0.0	21.1	11.1
LnGrp LOS	D		D				F	A			C	B
Approach Vol, veh/h		108			0			1513			1613	
Approach Delay, s/veh		38.7			0.0			32.8			20.3	
Approach LOS		D						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.5	26.0	46.2		0.0		72.2
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		33.0	21.5	44.0		31.0		70.0
Max Q Clear Time (g_c+I1), s		3.7	23.5	31.9		0.0		5.7
Green Ext Time (p_c), s		0.5	0.0	9.3		0.0		12.6

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	200	50	170	420	70	110	450	100	110	1270	390
Future Volume (veh/h)	100	200	50	170	420	70	110	450	100	110	1270	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	118	235	19	200	494	77	129	529	40	129	1494	294
Adj No. of Lanes	2	1	1	2	1	0	2	3	1	1	3	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	589	488	253	535	83	178	1866	565	154	2044	621
Arrive On Green	0.05	0.32	0.32	0.07	0.34	0.34	0.05	0.37	0.37	0.09	0.41	0.41
Sat Flow, veh/h	3408	1845	1530	3408	1552	242	3408	5036	1525	1757	5036	1529
Grp Volume(v), veh/h	118	235	19	200	0	571	129	529	40	129	1494	294
Grp Sat Flow(s),veh/h/ln	1704	1845	1530	1704	0	1794	1704	1679	1525	1757	1679	1529
Q Serve(g_s), s	4.4	12.9	1.1	7.5	0.0	39.8	4.8	9.6	2.2	9.4	32.6	18.4
Cycle Q Clear(g_c), s	4.4	12.9	1.1	7.5	0.0	39.8	4.8	9.6	2.2	9.4	32.6	18.4
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	589	488	253	0	618	178	1866	565	154	2044	621
V/C Ratio(X)	0.71	0.40	0.04	0.79	0.00	0.92	0.72	0.28	0.07	0.84	0.73	0.47
Avail Cap(c_a), veh/h	186	610	506	343	0	676	197	1866	565	242	2044	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.00	0.63	0.95	0.95	0.95	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	34.5	30.5	59.2	0.0	41.0	60.7	28.8	26.4	58.4	32.6	28.4
Incr Delay (d2), s/veh	9.4	0.8	0.1	4.8	0.0	13.0	9.9	0.4	0.2	11.3	2.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.7	0.5	3.7	0.0	21.9	2.5	4.5	1.0	5.1	15.5	8.2
LnGrp Delay(d),s/veh	70.3	35.3	30.6	63.9	0.0	53.9	70.6	29.1	26.7	69.7	35.0	31.0
LnGrp LOS	E	D	C	E		D	E	C	C	E	C	C
Approach Vol, veh/h		372			771			698			1917	
Approach Delay, s/veh		46.2			56.5			36.7			36.7	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	46.5	11.3	58.1	10.9	49.8	15.9	53.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.1	43.0	7.5	47.1	7.1	49.0	17.9	36.7
Max Q Clear Time (g_c+I1), s	9.5	14.9	6.8	34.6	6.4	41.8	11.4	11.6
Green Ext Time (p_c), s	0.2	2.3	0.0	9.8	0.0	3.0	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	180	10	20	290	80	20	140	20	60	140	250
Future Volume (veh/h)	190	180	10	20	290	80	20	140	20	60	140	250
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	317	300	15	33	483	58	33	233	28	100	233	105
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	355	834	42	45	558	460	45	313	38	129	447	380
Arrive On Green	0.20	0.48	0.48	0.03	0.30	0.30	0.03	0.19	0.19	0.07	0.24	0.24
Sat Flow, veh/h	1757	1740	87	1757	1845	1519	1757	1604	193	1757	1845	1568
Grp Volume(v), veh/h	317	0	315	33	483	58	33	0	261	100	233	105
Grp Sat Flow(s),veh/h/ln	1757	0	1827	1757	1845	1519	1757	0	1797	1757	1845	1568
Q Serve(g_s), s	14.3	0.0	8.8	1.5	20.2	2.3	1.5	0.0	11.2	4.6	8.9	4.4
Cycle Q Clear(g_c), s	14.3	0.0	8.8	1.5	20.2	2.3	1.5	0.0	11.2	4.6	8.9	4.4
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	875	45	558	460	45	0	350	129	447	380
V/C Ratio(X)	0.89	0.00	0.36	0.73	0.87	0.13	0.73	0.00	0.75	0.78	0.52	0.28
Avail Cap(c_a), veh/h	431	0	875	431	679	559	431	0	441	431	453	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	13.4	39.4	26.8	20.6	39.4	0.0	30.9	37.1	26.8	25.1
Incr Delay (d2), s/veh	16.1	0.0	0.4	8.0	10.6	0.2	8.0	0.0	6.2	3.8	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	4.5	0.8	11.8	1.0	0.8	0.0	6.1	2.4	4.7	2.0
LnGrp Delay(d),s/veh	47.8	0.0	13.7	47.4	37.4	20.8	47.4	0.0	37.1	40.9	28.2	25.6
LnGrp LOS	D		B	D	D	C	D		D	D	C	C
Approach Vol, veh/h		632			574			294			438	
Approach Delay, s/veh		30.8			36.3			38.3			30.5	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	44.1	6.6	24.2	21.0	29.7	10.5	20.4
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.5	10.8	3.5	10.9	16.3	22.2	6.6	13.2
Green Ext Time (p_c), s	0.0	2.3	0.0	1.6	0.2	2.5	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	190	40	30	230	100	50	60	40	90	50	110
Future Volume (veh/h)	30	190	40	30	230	100	50	60	40	90	50	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	288	16	45	348	38	76	91	41	136	76	106
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	63	810	357	63	810	348	97	360	162	176	232	323
Arrive On Green	0.04	0.23	0.23	0.04	0.23	0.23	0.06	0.31	0.31	0.10	0.35	0.35
Sat Flow, veh/h	1757	3505	1544	1757	3505	1505	1757	1170	527	1757	657	916
Grp Volume(v), veh/h	45	288	16	45	348	38	76	0	132	136	0	182
Grp Sat Flow(s),veh/h/ln	1757	1752	1544	1757	1752	1505	1757	0	1698	1757	0	1573
Q Serve(g_s), s	1.4	3.9	0.5	1.4	4.8	1.1	2.4	0.0	3.3	4.3	0.0	4.8
Cycle Q Clear(g_c), s	1.4	3.9	0.5	1.4	4.8	1.1	2.4	0.0	3.3	4.3	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.58
Lane Grp Cap(c), veh/h	63	810	357	63	810	348	97	0	523	176	0	555
V/C Ratio(X)	0.72	0.36	0.04	0.72	0.43	0.11	0.78	0.00	0.25	0.77	0.00	0.33
Avail Cap(c_a), veh/h	618	1849	815	618	1849	794	618	0	717	618	0	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	18.3	17.0	27.1	18.7	17.2	26.5	0.0	14.8	25.0	0.0	13.5
Incr Delay (d2), s/veh	5.5	0.4	0.1	5.5	0.5	0.2	5.1	0.0	0.4	2.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.9	0.2	0.8	2.4	0.5	1.3	0.0	1.6	2.2	0.0	2.1
LnGrp Delay(d),s/veh	32.7	18.7	17.1	32.7	19.2	17.4	31.6	0.0	15.1	27.7	0.0	14.0
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		349			431			208			318	
Approach Delay, s/veh		20.4			20.4			21.1			19.8	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	18.1	7.6	24.5	6.5	18.1	10.2	22.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.4	5.9	4.4	6.8	3.4	6.8	6.3	5.3
Green Ext Time (p_c), s	0.0	2.5	0.1	1.4	0.0	3.1	0.1	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	210	250	300	240	120	260	870	100	120	1590	190
Future Volume (veh/h)	60	210	250	300	240	120	260	870	100	120	1590	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	73	256	98	366	293	55	317	1061	42	146	1939	152
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	549	737	364	622	524	320	1858	575	170	1853	561
Arrive On Green	0.07	0.30	0.30	0.11	0.34	0.34	0.09	0.37	0.37	0.10	0.37	0.37
Sat Flow, veh/h	3408	1845	2478	3408	1845	1555	3408	5036	1559	1757	5036	1525
Grp Volume(v), veh/h	73	256	98	366	293	55	317	1061	42	146	1939	152
Grp Sat Flow(s),veh/h/ln	1704	1845	1239	1704	1845	1555	1704	1679	1559	1757	1679	1525
Q Serve(g_s), s	2.9	15.9	4.1	15.0	17.6	3.4	13.1	23.7	2.5	11.5	51.7	9.8
Cycle Q Clear(g_c), s	2.9	15.9	4.1	15.0	17.6	3.4	13.1	23.7	2.5	11.5	51.7	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	549	737	364	622	524	320	1858	575	170	1853	561
V/C Ratio(X)	0.32	0.47	0.13	1.01	0.47	0.10	0.99	0.57	0.07	0.86	1.05	0.27
Avail Cap(c_a), veh/h	255	608	817	364	667	562	320	1858	575	261	1853	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	40.3	36.1	62.7	36.7	32.0	63.6	35.4	28.7	62.5	44.4	31.2
Incr Delay (d2), s/veh	0.3	0.9	0.1	48.6	0.8	0.1	47.4	0.5	0.1	10.6	34.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.2	1.4	9.5	9.1	1.5	8.2	11.1	1.1	6.1	29.7	4.2
LnGrp Delay(d),s/veh	62.8	41.1	36.2	111.4	37.5	32.1	110.9	36.0	28.8	73.1	78.6	31.5
LnGrp LOS	E	D	D	F	D	C	F	D	C	E	F	C
Approach Vol, veh/h		427			714			1420			2237	
Approach Delay, s/veh		43.7			75.0			52.5			75.0	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	46.8	17.7	57.0	13.4	52.4	17.6	57.1
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	15.0	46.3	13.2	51.7	10.5	50.8	20.9	44.5
Max Q Clear Time (g_c+I1), s	17.6	17.9	15.1	53.7	4.9	19.6	13.5	25.7
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.0	2.9	0.1	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	65.6
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	300	10	40	430	10	10	10	50	10	10	60
Future Volume (veh/h)	20	300	10	40	430	10	10	10	50	10	10	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	380	7	51	544	7	13	13	7	13	13	8
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	43	707	582	76	742	612	24	99	53	24	92	57
Arrive On Green	0.02	0.38	0.38	0.04	0.40	0.40	0.01	0.09	0.09	0.01	0.09	0.09
Sat Flow, veh/h	1757	1845	1519	1757	1845	1520	1757	1117	601	1757	1045	643
Grp Volume(v), veh/h	25	380	7	51	544	7	13	0	20	13	0	21
Grp Sat Flow(s),veh/h/ln	1757	1845	1519	1757	1845	1520	1757	0	1718	1757	0	1688
Q Serve(g_s), s	0.6	6.3	0.1	1.1	9.8	0.1	0.3	0.0	0.4	0.3	0.0	0.5
Cycle Q Clear(g_c), s	0.6	6.3	0.1	1.1	9.8	0.1	0.3	0.0	0.4	0.3	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.35	1.00		0.38
Lane Grp Cap(c), veh/h	43	707	582	76	742	612	24	0	152	24	0	149
V/C Ratio(X)	0.59	0.54	0.01	0.67	0.73	0.01	0.55	0.00	0.13	0.55	0.00	0.14
Avail Cap(c_a), veh/h	179	1170	964	206	1198	987	179	0	1226	179	0	1204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	9.4	7.5	18.5	9.9	7.0	19.2	0.0	16.5	19.2	0.0	16.5
Incr Delay (d2), s/veh	4.7	0.9	0.0	3.7	2.0	0.0	7.2	0.0	0.1	7.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.3	0.0	0.6	5.3	0.0	0.2	0.0	0.2	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.6	10.3	7.5	22.2	12.0	7.1	26.4	0.0	16.6	26.4	0.0	16.7
LnGrp LOS	C	B	A	C	B	A	C		B	C		B
Approach Vol, veh/h		412			602			33			34	
Approach Delay, s/veh		11.1			12.8			20.5			20.4	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	20.0	5.0	8.0	5.5	20.8	5.0	8.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	4.6	24.9	4.0	28.0	4.0	25.5	4.0	28.0
Max Q Clear Time (g_c+I1), s	3.1	8.3	2.3	2.5	2.6	11.8	2.3	2.4
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.0	4.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	240	20	60	40	20	140
Future Vol, veh/h	240	20	60	40	20	140
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	316	26	79	53	26	184
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12.3	9	10.2
HCM LOS	B	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	92%	12%
Vol Thru, %	60%	0%	88%
Vol Right, %	40%	8%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	100	260	160
LT Vol	0	240	20
Through Vol	60	0	140
RT Vol	40	20	0
Lane Flow Rate	132	342	211
Geometry Grp	1	1	1
Degree of Util (X)	0.178	0.467	0.294
Departure Headway (Hd)	4.865	4.916	5.02
Convergence, Y/N	Yes	Yes	Yes
Cap	732	729	712
Service Time	2.933	2.977	3.082
HCM Lane V/C Ratio	0.18	0.469	0.296
HCM Control Delay	9	12.3	10.2
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.6	2.5	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	100	80	110	170	70	40	790	110	40	690	30
Future Volume (veh/h)	70	100	80	110	170	70	40	790	110	40	690	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	99	141	27	155	239	86	56	1113	73	56	972	19
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	393	332	215	268	96	96	2614	797	96	2614	807
Arrive On Green	0.07	0.21	0.21	0.06	0.21	0.21	0.05	0.52	0.52	0.05	0.52	0.52
Sat Flow, veh/h	1757	1845	1557	3408	1295	466	1757	5036	1535	1757	5036	1554
Grp Volume(v), veh/h	99	141	27	155	0	325	56	1113	73	56	972	19
Grp Sat Flow(s),veh/h/ln	1757	1845	1557	1704	0	1762	1757	1679	1535	1757	1679	1554
Q Serve(g_s), s	7.0	8.2	1.7	5.6	0.0	22.6	3.9	17.2	3.0	3.9	14.5	0.7
Cycle Q Clear(g_c), s	7.0	8.2	1.7	5.6	0.0	22.6	3.9	17.2	3.0	3.9	14.5	0.7
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	393	332	215	0	364	96	2614	797	96	2614	807
V/C Ratio(X)	0.81	0.36	0.08	0.72	0.00	0.89	0.58	0.43	0.09	0.58	0.37	0.02
Avail Cap(c_a), veh/h	216	621	524	311	0	537	146	2614	797	146	2614	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.00	0.84	0.80	0.80	0.80	0.93	0.93	0.93
Uniform Delay (d), s/veh	57.8	42.2	39.7	57.9	0.0	48.6	58.2	18.7	15.3	58.2	18.1	14.8
Incr Delay (d2), s/veh	9.0	0.4	0.1	2.8	0.0	9.7	3.3	0.4	0.2	3.9	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.2	0.8	2.7	0.0	12.0	2.0	8.0	1.3	2.0	6.8	0.3
LnGrp Delay(d),s/veh	66.7	42.6	39.8	60.7	0.0	58.3	61.5	19.1	15.5	62.0	18.4	14.8
LnGrp LOS	E	D	D	E		E	E	B	B	E	B	B
Approach Vol, veh/h		267			480			1242			1047	
Approach Delay, s/veh		51.3			59.1			20.8			20.7	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	31.5	11.4	70.7	13.3	30.6	11.4	70.7
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	11.5	42.4	10.5	42.7	15.5	38.4	10.5	* 43
Max Q Clear Time (g_c+I1), s	7.6	10.2	5.9	16.5	9.0	24.6	5.9	19.2
Green Ext Time (p_c), s	0.1	0.7	0.0	10.2	0.1	1.3	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	190	10	80	280	30	20	50	110	20	40	30
Future Volume (veh/h)	30	190	10	80	280	30	20	50	110	20	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	48	306	14	129	452	3	32	81	75	32	65	14
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	70	519	24	168	650	551	51	149	138	51	253	54
Arrive On Green	0.04	0.30	0.30	0.10	0.35	0.35	0.03	0.17	0.17	0.03	0.17	0.17
Sat Flow, veh/h	1757	1750	80	1757	1845	1566	1757	865	801	1757	1472	317
Grp Volume(v), veh/h	48	0	320	129	452	3	32	0	156	32	0	79
Grp Sat Flow(s),veh/h/ln	1757	0	1830	1757	1845	1566	1757	0	1666	1757	0	1789
Q Serve(g_s), s	1.2	0.0	6.8	3.3	9.6	0.1	0.8	0.0	3.9	0.8	0.0	1.7
Cycle Q Clear(g_c), s	1.2	0.0	6.8	3.3	9.6	0.1	0.8	0.0	3.9	0.8	0.0	1.7
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.48	1.00		0.18
Lane Grp Cap(c), veh/h	70	0	543	168	650	551	51	0	286	51	0	307
V/C Ratio(X)	0.68	0.00	0.59	0.77	0.70	0.01	0.62	0.00	0.54	0.62	0.00	0.26
Avail Cap(c_a), veh/h	406	0	1891	927	1906	1618	290	0	1209	290	0	944
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	13.6	20.1	12.6	9.6	21.8	0.0	17.2	21.8	0.0	16.3
Incr Delay (d2), s/veh	4.3	0.0	1.5	2.8	1.9	0.0	4.5	0.0	0.6	4.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	3.6	1.7	5.1	0.0	0.5	0.0	1.8	0.5	0.0	0.9
LnGrp Delay(d),s/veh	25.8	0.0	15.1	22.9	14.6	9.6	26.3	0.0	17.8	26.3	0.0	16.5
LnGrp LOS	C		B	C	B	A	C		B	C		B
Approach Vol, veh/h		368			584			188			111	
Approach Delay, s/veh		16.5			16.4			19.3			19.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	18.5	5.8	12.3	6.3	21.0	5.8	12.3
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	5.3	8.8	2.8	3.7	3.2	11.6	2.8	5.9
Green Ext Time (p_c), s	0.1	3.0	0.0	0.2	0.0	4.5	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	240	0	0	340	10	0	0	0	10	0	30
Future Volume (veh/h)	40	240	0	0	340	10	0	0	0	10	0	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	0.95		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	62	369	0	0	523	7	0	0	0	15	0	4
Adj No. of Lanes	1	1	1	1	1	1	0	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	1192	1013	6	819	693	0	76	0	306	0	64
Arrive On Green	0.05	0.65	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.04	0.00	0.04
Sat Flow, veh/h	1757	1845	1568	1757	1845	1559	0	1845	0	1671	0	1544
Grp Volume(v), veh/h	62	369	0	0	523	7	0	0	0	15	0	4
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1559	0	1845	0	1671	0	1544
Q Serve(g_s), s	1.1	2.7	0.0	0.0	6.7	0.1	0.0	0.0	0.0	0.3	0.0	0.1
Cycle Q Clear(g_c), s	1.1	2.7	0.0	0.0	6.7	0.1	0.0	0.0	0.0	0.3	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	1192	1013	6	819	693	0	76	0	306	0	64
V/C Ratio(X)	0.66	0.31	0.00	0.00	0.64	0.01	0.00	0.00	0.00	0.05	0.00	0.06
Avail Cap(c_a), veh/h	1157	1822	1549	1157	1822	1540	0	1215	0	1338	0	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	2.4	0.0	0.0	6.5	4.7	0.0	0.0	0.0	14.1	0.0	14.0
Incr Delay (d2), s/veh	2.9	0.2	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0
LnGrp Delay(d),s/veh	17.0	2.6	0.0	0.0	7.7	4.7	0.0	0.0	0.0	14.2	0.0	14.6
LnGrp LOS	B	A			A	A				B		B
Approach Vol, veh/h		431			530			0			19	
Approach Delay, s/veh		4.7			7.7			0.0			14.3	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	0.0	24.6		5.7	6.1	18.5		5.7
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.0	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	0.0	4.7		2.3	3.1	8.7		0.0
Green Ext Time (p_c), s	0.0	3.2		0.0	0.1	4.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	240	30	60	330	20	30	30	60	10	20	20
Future Volume (veh/h)	30	240	30	60	330	20	30	30	60	10	20	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	364	19	91	500	13	45	45	26	15	30	4
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	145	697	592	117	666	563	66	184	106	27	232	31
Arrive On Green	0.08	0.38	0.38	0.07	0.36	0.36	0.04	0.17	0.17	0.02	0.15	0.15
Sat Flow, veh/h	1757	1845	1568	1757	1845	1557	1757	1093	631	1757	1588	212
Grp Volume(v), veh/h	45	364	19	91	500	13	45	0	71	15	0	34
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1557	1757	0	1724	1757	0	1800
Q Serve(g_s), s	1.2	7.4	0.4	2.5	11.5	0.3	1.2	0.0	1.7	0.4	0.0	0.8
Cycle Q Clear(g_c), s	1.2	7.4	0.4	2.5	11.5	0.3	1.2	0.0	1.7	0.4	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.12
Lane Grp Cap(c), veh/h	145	697	592	117	666	563	66	0	290	27	0	263
V/C Ratio(X)	0.31	0.52	0.03	0.78	0.75	0.02	0.68	0.00	0.24	0.57	0.00	0.13
Avail Cap(c_a), veh/h	727	1145	974	727	1145	967	727	0	856	727	0	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	11.7	9.5	22.2	13.5	9.9	23.0	0.0	17.4	23.6	0.0	18.0
Incr Delay (d2), s/veh	0.4	0.9	0.0	4.2	2.4	0.0	4.6	0.0	0.4	6.9	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.9	0.2	1.3	6.3	0.1	0.7	0.0	0.8	0.2	0.0	0.4
LnGrp Delay(d),s/veh	21.3	12.5	9.5	26.4	16.0	10.0	27.5	0.0	17.9	30.5	0.0	18.2
LnGrp LOS	C	B	A	C	B	A	C		B	C		B
Approach Vol, veh/h		428			604			116			49	
Approach Delay, s/veh		13.3			17.4			21.6			21.9	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	23.2	5.8	11.6	8.5	22.5	4.7	12.6
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.5	9.4	3.2	2.8	3.2	13.5	2.4	3.7
Green Ext Time (p_c), s	0.1	3.0	0.0	0.1	0.0	4.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1410	490	750	1230	40	1050	740	980	60	810	230
Future Volume (veh/h)	250	1410	490	750	1230	40	1050	740	980	60	810	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	347	1958	655	1042	1708	55	1458	1028	1042	83	1125	77
Adj No. of Lanes	2	4	1	3	3	0	3	4	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	393	1743	711	887	1696	55	887	2040	498	319	1496	648
Arrive On Green	0.12	0.27	0.27	0.18	0.34	0.34	0.18	0.32	0.32	0.09	0.24	0.24
Sat Flow, veh/h	3408	6346	1568	4954	5009	161	4954	6346	1548	3408	6346	2749
Grp Volume(v), veh/h	347	1958	655	1042	1145	618	1458	1028	1042	83	1125	77
Grp Sat Flow(s),veh/h/ln	1704	1586	1568	1651	1679	1813	1651	1586	1548	1704	1586	1375
Q Serve(g_s), s	16.8	46.0	46.0	30.0	56.7	56.7	30.0	22.0	53.8	3.8	27.6	3.7
Cycle Q Clear(g_c), s	16.8	46.0	46.0	30.0	56.7	56.7	30.0	22.0	53.8	3.8	27.6	3.7
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	1743	711	887	1137	614	887	2040	498	319	1496	648
V/C Ratio(X)	0.88	1.12	0.92	1.17	1.01	1.01	1.64	0.50	2.09	0.26	0.75	0.12
Avail Cap(c_a), veh/h	610	1743	711	887	1137	614	887	2040	498	610	1743	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	60.8	42.9	68.8	55.4	55.4	68.8	46.0	56.8	70.5	59.4	50.3
Incr Delay (d2), s/veh	6.4	63.8	17.3	90.3	28.4	38.3	294.5	0.3	499.2	0.2	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	27.8	31.7	21.1	30.7	34.8	37.8	9.7	92.0	1.8	12.3	1.4
LnGrp Delay(d),s/veh	79.4	124.5	60.2	159.1	83.8	93.7	363.3	46.3	556.0	70.7	61.3	50.4
LnGrp LOS	E	F	E	F	F	F	F	D	F	E	E	D
Approach Vol, veh/h		2960			2805			3528			1285	
Approach Delay, s/veh		105.0			113.9			327.8			61.2	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	52.0	35.0	45.5	24.3	62.7	20.7	59.8
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	32.0	48.0	32.0	29.6	18.8	58.7	5.8	55.8
Green Ext Time (p_c), s	0.0	0.0	0.0	9.4	0.5	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	176.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	2260	50	10	1890	40	60	10	10	60	10	70
Future Volume (veh/h)	130	2260	50	10	1890	40	60	10	10	60	10	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	183	3183	46	14	2662	32	85	14	1	85	14	10
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	208	3638	1133	22	3106	946	108	42	3	107	24	17
Arrive On Green	0.12	0.72	0.72	0.01	0.62	0.62	0.06	0.02	0.02	0.06	0.02	0.02
Sat Flow, veh/h	1757	5036	1568	1757	5036	1533	1757	1700	121	1757	1002	716
Grp Volume(v), veh/h	183	3183	46	14	2662	32	85	0	15	85	0	24
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1757	1679	1533	1757	0	1821	1757	0	1718
Q Serve(g_s), s	10.8	50.3	0.9	0.8	45.4	0.9	5.0	0.0	0.9	5.0	0.0	1.5
Cycle Q Clear(g_c), s	10.8	50.3	0.9	0.8	45.4	0.9	5.0	0.0	0.9	5.0	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.42
Lane Grp Cap(c), veh/h	208	3638	1133	22	3106	946	108	0	45	107	0	42
V/C Ratio(X)	0.88	0.87	0.04	0.62	0.86	0.03	0.79	0.00	0.34	0.79	0.00	0.58
Avail Cap(c_a), veh/h	208	3638	1133	67	3154	960	228	0	707	108	0	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.8	11.0	4.2	51.9	16.4	7.9	48.8	0.0	50.6	48.9	0.0	51.0
Incr Delay (d2), s/veh	31.2	2.7	0.0	10.1	2.6	0.0	4.7	0.0	1.6	29.3	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	23.6	0.4	0.5	21.5	0.4	2.6	0.0	0.4	3.3	0.0	0.7
LnGrp Delay(d),s/veh	77.0	13.8	4.2	62.0	19.1	7.9	53.5	0.0	52.3	78.2	0.0	55.6
LnGrp LOS	E	B	A	E	B	A	D		D	E		E
Approach Vol, veh/h		3412			2708			100			109	
Approach Delay, s/veh		17.0			19.1			53.3			73.2	
Approach LOS		B			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	81.6	11.0	7.1	17.0	70.4	11.0	7.2
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	4.0	74.6	13.7	33.8	12.5	66.1	6.5	41.0
Max Q Clear Time (g_c+I1), s	2.8	52.3	7.0	3.5	12.8	47.4	7.0	2.9
Green Ext Time (p_c), s	0.0	21.9	0.0	0.1	0.0	17.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2290	60	150	1830	0	50	30	220	10	0	10
Future Volume (veh/h)	20	2290	60	150	1830	0	50	30	220	10	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	29	3271	50	214	2614	0	71	43	188	14	0	1
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	44	2867	889	183	3267	1017	122	304	256	27	0	220
Arrive On Green	0.03	0.57	0.57	0.10	0.65	0.00	0.04	0.16	0.16	0.02	0.00	0.14
Sat Flow, veh/h	1757	5036	1561	1757	5036	1568	3408	1845	1554	1757	0	1528
Grp Volume(v), veh/h	29	3271	50	214	2614	0	71	43	188	14	0	1
Grp Sat Flow(s),veh/h/ln	1757	1679	1561	1757	1679	1568	1704	1845	1554	1757	0	1528
Q Serve(g_s), s	2.1	73.6	1.8	13.5	49.0	0.0	2.7	2.6	14.9	1.0	0.0	0.1
Cycle Q Clear(g_c), s	2.1	73.6	1.8	13.5	49.0	0.0	2.7	2.6	14.9	1.0	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	44	2867	889	183	3267	1017	122	304	256	27	0	220
V/C Ratio(X)	0.66	1.14	0.06	1.17	0.80	0.00	0.58	0.14	0.73	0.52	0.00	0.00
Avail Cap(c_a), veh/h	68	2867	889	183	3267	1017	185	557	469	68	0	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.5	27.8	12.4	57.9	16.6	0.0	61.4	46.2	51.3	63.2	0.0	47.4
Incr Delay (d2), s/veh	6.1	68.1	0.0	118.3	1.6	0.0	1.7	0.1	1.5	5.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	52.1	0.8	12.6	23.0	0.0	1.3	1.3	6.5	0.5	0.0	0.0
LnGrp Delay(d),s/veh	68.6	95.9	12.4	176.2	18.1	0.0	63.0	46.3	52.9	68.9	0.0	47.4
LnGrp LOS	E	F	B	F	B		E	D	D	E		D
Approach Vol, veh/h		3350			2828			302			15	
Approach Delay, s/veh		94.4			30.1			54.3			67.4	
Approach LOS		F			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	78.9	9.1	23.2	7.7	89.2	6.5	25.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	13.5	73.6	7.0	37.0	5.0	82.1	5.0	39.0
Max Q Clear Time (g_c+I1), s	15.5	75.6	4.7	2.1	4.1	51.0	3.0	16.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	28.3	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	64.5
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1900	40	10	1690	20	70	0	10	30	10	100
Future Volume (veh/h)	340	1900	40	10	1690	20	70	0	10	30	10	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	493	2754	38	14	2449	15	101	0	2	43	14	20
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	537	3309	1030	106	2673	812	173	0	352	68	70	100
Arrive On Green	0.16	0.66	0.66	0.03	0.53	0.53	0.05	0.00	0.11	0.04	0.10	0.10
Sat Flow, veh/h	3408	5036	1567	3408	5036	1530	3514	0	3111	1757	686	979
Grp Volume(v), veh/h	493	2754	38	14	2449	15	101	0	2	43	0	34
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1530	1757	0	1555	1757	0	1665
Q Serve(g_s), s	16.7	48.6	1.0	0.5	52.2	0.5	3.3	0.0	0.1	2.8	0.0	2.2
Cycle Q Clear(g_c), s	16.7	48.6	1.0	0.5	52.2	0.5	3.3	0.0	0.1	2.8	0.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	537	3309	1030	106	2673	812	173	0	352	68	0	170
V/C Ratio(X)	0.92	0.83	0.04	0.13	0.92	0.02	0.58	0.00	0.01	0.64	0.00	0.20
Avail Cap(c_a), veh/h	537	3309	1030	290	2690	817	180	0	1166	90	0	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	15.2	7.1	55.3	25.2	13.1	54.6	0.0	46.2	55.6	0.0	48.3
Incr Delay (d2), s/veh	20.5	2.0	0.0	0.2	5.6	0.0	2.8	0.0	0.0	3.6	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	22.8	0.4	0.2	25.4	0.2	1.7	0.0	0.0	1.4	0.0	1.0
LnGrp Delay(d),s/veh	69.2	17.3	7.1	55.5	30.8	13.1	57.4	0.0	46.2	59.3	0.0	49.1
LnGrp LOS	E	B	A	E	C	B	E		D	E		D
Approach Vol, veh/h		3285			2478			103			77	
Approach Delay, s/veh		24.9			30.8			57.2			54.8	
Approach LOS		C			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	82.4	10.3	16.5	23.0	67.6	9.0	17.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	10.0	71.2	6.0	44.0	18.5	62.7	6.0	44.0
Max Q Clear Time (g_c+I1), s	2.5	50.6	5.3	4.2	18.7	54.2	4.8	2.1
Green Ext Time (p_c), s	0.0	19.6	0.0	0.2	0.0	8.2	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	1610	400	810	1030	590	110	490	360	570	570	100
Future Volume (veh/h)	180	1610	400	810	1030	590	110	490	360	570	570	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	257	2300	370	1157	1471	602	157	700	173	814	814	42
Adj No. of Lanes	2	3	2	3	3	1	3	3	2	3	3	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	280	1713	939	848	2116	659	338	841	461	889	1400	433
Arrive On Green	0.08	0.34	0.34	0.17	0.42	0.42	0.07	0.17	0.17	0.18	0.28	0.28
Sat Flow, veh/h	3408	5036	2760	4954	5036	1568	4954	5036	2760	4954	5036	1556
Grp Volume(v), veh/h	257	2300	370	1157	1471	602	157	700	173	814	814	42
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1651	1679	1568	1651	1679	1380	1651	1679	1556
Q Serve(g_s), s	10.9	49.7	14.9	25.0	35.0	52.8	4.5	19.6	8.1	23.6	20.3	2.9
Cycle Q Clear(g_c), s	10.9	49.7	14.9	25.0	35.0	52.8	4.5	19.6	8.1	23.6	20.3	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	1713	939	848	2116	659	338	841	461	889	1400	433
V/C Ratio(X)	0.92	1.34	0.39	1.36	0.70	0.91	0.46	0.83	0.38	0.92	0.58	0.10
Avail Cap(c_a), veh/h	280	1713	939	848	2116	659	339	920	504	960	1551	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	48.2	36.7	60.6	34.7	39.9	65.5	58.9	54.1	58.9	45.4	39.1
Incr Delay (d2), s/veh	32.5	158.2	0.4	171.8	0.8	16.9	0.4	6.5	0.7	12.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	48.1	5.7	24.9	16.4	26.0	2.0	9.6	3.2	11.8	9.5	1.3
LnGrp Delay(d),s/veh	99.1	206.4	37.1	232.4	35.5	56.8	65.9	65.4	54.8	70.9	46.0	39.3
LnGrp LOS	F	F	D	F	D	E	E	E	D	E	D	D
Approach Vol, veh/h		2927			3230			1030			1670	
Approach Delay, s/veh		175.6			110.0			63.7			58.0	
Approach LOS		F			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.0	55.5	15.3	46.3	17.3	67.2	31.5	30.1
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	25.0	* 50	10.0	45.0	12.0	60.9	28.3	26.7
Max Q Clear Time (g_c+I1), s	27.0	51.7	6.5	22.3	12.9	54.8	25.6	21.6
Green Ext Time (p_c), s	0.0	0.0	0.1	7.6	0.0	4.0	0.6	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	116.5
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	0	170	0	0	0	270	850	0	0	500	40
Future Volume (veh/h)	100	0	170	0	0	0	270	850	0	0	500	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	167	0	38	0	0	0	450	1417	0	0	833	20
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	347	0	310	0	3	0	509	3656	0	0	1252	551
Arrive On Green	0.10	0.00	0.10	0.00	0.00	0.00	0.29	0.73	0.00	0.00	0.36	0.36
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1543
Grp Volume(v), veh/h	167	0	38	0	0	0	450	1417	0	0	833	20
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1543
Q Serve(g_s), s	2.6	0.0	0.6	0.0	0.0	0.0	14.0	6.1	0.0	0.0	11.4	0.5
Cycle Q Clear(g_c), s	2.6	0.0	0.6	0.0	0.0	0.0	14.0	6.1	0.0	0.0	11.4	0.5
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	347	0	310	0	3	0	509	3656	0	0	1252	551
V/C Ratio(X)	0.48	0.00	0.12	0.00	0.00	0.00	0.88	0.39	0.00	0.00	0.67	0.04
Avail Cap(c_a), veh/h	1909	0	1704	0	1002	0	1032	6003	0	0	1843	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	23.5	0.0	0.0	0.0	19.3	3.0	0.0	0.0	15.5	11.9
Incr Delay (d2), s/veh	1.5	0.0	0.3	0.0	0.0	0.0	2.1	0.1	0.0	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.3	0.0	0.0	0.0	7.0	2.8	0.0	0.0	5.6	0.2
LnGrp Delay(d),s/veh	25.8	0.0	23.7	0.0	0.0	0.0	21.4	3.1	0.0	0.0	16.3	12.0
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		205			0			1867			853	
Approach Delay, s/veh		25.4			0.0			7.5			16.2	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		10.6	21.0	25.4		0.0		46.4
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		31.0	33.5	30.0		31.0		68.0
Max Q Clear Time (g_c+I1), s		4.6	16.0	13.4		0.0		8.1
Green Ext Time (p_c), s		1.1	0.6	6.6		0.0		21.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	110	90	200	80	50	830	90	40	570	130
Future Volume (veh/h)	200	140	110	90	200	80	50	830	90	40	570	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	197	48	127	282	100	70	1169	51	56	803	77
Adj No. of Lanes	2	1	1	2	1	0	2	3	1	1	3	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	342	543	455	181	322	114	128	2270	706	72	2287	710
Arrive On Green	0.10	0.29	0.29	0.05	0.25	0.25	0.04	0.45	0.45	0.04	0.45	0.45
Sat Flow, veh/h	3408	1845	1545	3408	1301	461	3408	5036	1566	1757	5036	1563
Grp Volume(v), veh/h	282	197	48	127	0	382	70	1169	51	56	803	77
Grp Sat Flow(s),veh/h/ln	1704	1845	1545	1704	0	1763	1704	1679	1566	1757	1679	1563
Q Serve(g_s), s	9.7	10.1	2.7	4.4	0.0	25.0	2.4	19.9	2.2	3.8	12.4	3.4
Cycle Q Clear(g_c), s	9.7	10.1	2.7	4.4	0.0	25.0	2.4	19.9	2.2	3.8	12.4	3.4
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	543	455	181	0	436	128	2270	706	72	2287	710
V/C Ratio(X)	0.83	0.36	0.11	0.70	0.00	0.88	0.55	0.51	0.07	0.78	0.35	0.11
Avail Cap(c_a), veh/h	454	693	581	253	0	558	165	2270	706	139	2287	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.90	0.00	0.90	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	33.4	30.8	55.9	0.0	43.4	56.7	23.6	18.7	57.0	21.3	18.8
Incr Delay (d2), s/veh	8.2	0.7	0.2	3.4	0.0	12.9	2.4	0.7	0.2	12.6	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.2	1.2	2.2	0.0	13.8	1.2	9.4	1.0	2.1	5.8	1.5
LnGrp Delay(d),s/veh	61.1	34.1	31.0	59.3	0.0	56.3	59.1	24.3	18.9	69.6	21.7	19.1
LnGrp LOS	E	C	C	E		E	E	C	B	E	C	B
Approach Vol, veh/h		527			509			1290			936	
Approach Delay, s/veh		48.3			57.1			26.0			24.4	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	40.3	9.0	59.8	16.5	34.7	9.4	59.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	8.3	45.1	5.8	40.9	16.0	38.0	9.5	37.2
Max Q Clear Time (g_c+I1), s	6.4	12.1	4.4	14.4	11.7	27.0	5.8	21.9
Green Ext Time (p_c), s	0.1	2.2	0.0	8.2	0.3	2.5	0.0	8.8

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	180	10	10	190	10	10	30	20	20	40	90
Future Volume (veh/h)	60	180	10	10	190	10	10	30	20	20	40	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	105	316	16	18	333	7	18	53	12	35	70	32
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	595	30	32	524	443	32	179	40	57	254	216
Arrive On Green	0.08	0.34	0.34	0.02	0.28	0.28	0.02	0.12	0.12	0.03	0.14	0.14
Sat Flow, veh/h	1757	1739	88	1757	1845	1560	1757	1445	327	1757	1845	1568
Grp Volume(v), veh/h	105	0	332	18	333	7	18	0	65	35	70	32
Grp Sat Flow(s),veh/h/ln	1757	0	1827	1757	1845	1560	1757	0	1772	1757	1845	1568
Q Serve(g_s), s	2.2	0.0	5.6	0.4	6.0	0.1	0.4	0.0	1.3	0.8	1.3	0.7
Cycle Q Clear(g_c), s	2.2	0.0	5.6	0.4	6.0	0.1	0.4	0.0	1.3	0.8	1.3	0.7
Prop In Lane	1.00		0.05	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	625	32	524	443	32	0	219	57	254	216
V/C Ratio(X)	0.78	0.00	0.53	0.56	0.64	0.02	0.56	0.00	0.30	0.61	0.28	0.15
Avail Cap(c_a), veh/h	918	0	1432	918	1446	1223	918	0	926	918	964	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	10.1	18.6	12.0	9.9	18.6	0.0	15.3	18.3	14.8	14.5
Incr Delay (d2), s/veh	3.7	0.0	1.0	5.7	1.8	0.0	5.7	0.0	1.1	3.9	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	2.9	0.2	3.3	0.1	0.2	0.0	0.7	0.4	0.7	0.3
LnGrp Delay(d),s/veh	21.1	0.0	11.1	24.3	13.8	9.9	24.3	0.0	16.3	22.2	15.6	15.0
LnGrp LOS	C		B	C	B	A	C		B	C	B	B
Approach Vol, veh/h		437			358			83			137	
Approach Delay, s/veh		13.5			14.2			18.0			17.1	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	18.1	5.2	9.8	7.4	15.9	5.7	9.2
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.4	7.6	2.4	3.3	4.2	8.0	2.8	3.3
Green Ext Time (p_c), s	0.0	2.6	0.0	0.5	0.1	2.6	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	140	110	80	160	40	30	20	100	50	20	40
Future Volume (veh/h)	40	140	110	80	160	40	30	20	100	50	20	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		0.86
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	74	259	47	148	296	20	56	37	55	84	49	39
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	801	356	191	993	443	74	170	253	108	247	196
Arrive On Green	0.05	0.23	0.23	0.11	0.28	0.28	0.04	0.26	0.26	0.06	0.28	0.28
Sat Flow, veh/h	1757	3505	1558	1757	3505	1562	1757	654	973	1757	883	702
Grp Volume(v), veh/h	74	259	47	148	296	20	56	0	92	84	0	88
Grp Sat Flow(s),veh/h/ln	1757	1752	1558	1757	1752	1562	1757	0	1627	1757	0	1585
Q Serve(g_s), s	2.3	3.3	1.3	4.4	3.6	0.5	1.7	0.0	2.4	2.6	0.0	2.3
Cycle Q Clear(g_c), s	2.3	3.3	1.3	4.4	3.6	0.5	1.7	0.0	2.4	2.6	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.60	1.00		0.44
Lane Grp Cap(c), veh/h	94	801	356	191	993	443	74	0	424	108	0	443
V/C Ratio(X)	0.79	0.32	0.13	0.78	0.30	0.05	0.76	0.00	0.22	0.78	0.00	0.20
Avail Cap(c_a), veh/h	648	1940	862	648	1940	865	648	0	721	648	0	702
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	17.4	16.6	23.5	15.2	14.1	25.7	0.0	15.7	25.1	0.0	14.9
Incr Delay (d2), s/veh	5.4	0.3	0.2	2.6	0.2	0.1	5.8	0.0	0.4	4.5	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.7	0.6	2.3	1.8	0.2	0.9	0.0	1.1	1.4	0.0	1.0
LnGrp Delay(d),s/veh	30.7	17.7	16.9	26.1	15.4	14.2	31.5	0.0	16.1	29.6	0.0	15.2
LnGrp LOS	C	B	B	C	B	B	C		B	C		B
Approach Vol, veh/h		380			464			148			172	
Approach Delay, s/veh		20.2			18.8			21.9			22.2	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	17.4	6.8	19.7	7.4	20.4	7.8	18.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	6.4	5.3	3.7	4.3	4.3	5.6	4.6	4.4
Green Ext Time (p_c), s	0.1	2.4	0.0	0.6	0.1	2.6	0.1	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	50	250	100	60	40	280	1330	100	40	700	100
Future Volume (veh/h)	110	50	250	100	60	40	280	1330	100	40	700	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	162	74	62	147	88	10	412	1956	98	59	1029	62
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	345	256	375	343	255	211	488	2473	768	144	2139	663
Arrive On Green	0.10	0.14	0.14	0.10	0.14	0.14	0.14	0.49	0.49	0.08	0.42	0.42
Sat Flow, veh/h	3408	1845	2699	3408	1845	1530	3408	5036	1563	1757	5036	1561
Grp Volume(v), veh/h	162	74	62	147	88	10	412	1956	98	59	1029	62
Grp Sat Flow(s),veh/h/ln	1704	1845	1349	1704	1845	1530	1704	1679	1563	1757	1679	1561
Q Serve(g_s), s	4.4	3.5	2.0	4.0	4.2	0.6	11.5	31.5	3.3	3.1	14.4	2.3
Cycle Q Clear(g_c), s	4.4	3.5	2.0	4.0	4.2	0.6	11.5	31.5	3.3	3.1	14.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	345	256	375	343	255	211	488	2473	768	144	2139	663
V/C Ratio(X)	0.47	0.29	0.17	0.43	0.35	0.05	0.84	0.79	0.13	0.41	0.48	0.09
Avail Cap(c_a), veh/h	384	870	1273	349	851	706	692	2618	812	180	2139	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	37.7	37.0	41.2	38.0	36.5	40.7	20.6	13.5	42.5	20.3	16.8
Incr Delay (d2), s/veh	0.4	0.9	0.3	0.3	1.1	0.1	4.8	1.8	0.1	0.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.9	0.7	1.9	2.2	0.2	5.7	14.9	1.5	1.5	6.7	1.0
LnGrp Delay(d),s/veh	41.7	38.6	37.3	41.5	39.2	36.6	45.6	22.4	13.6	43.2	20.5	16.9
LnGrp LOS	D	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		298			245			2466			1150	
Approach Delay, s/veh		40.0			40.5			25.9			21.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	18.5	18.5	46.7	13.9	18.5	12.0	53.2
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	10.0	46.0	19.8	40.4	11.0	45.0	10.0	50.7
Max Q Clear Time (g_c+I1), s	6.4	5.5	13.5	16.4	6.4	6.2	5.1	33.5
Green Ext Time (p_c), s	0.1	1.0	0.5	10.2	0.1	0.7	0.0	14.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.6
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	270	10	10	350	10	10	10	10	10	10	20
Future Volume (veh/h)	30	270	10	10	350	10	10	10	10	10	10	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	409	9	15	530	7	15	15	1	15	15	3
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	70	778	641	27	733	619	27	116	8	27	101	20
Arrive On Green	0.04	0.42	0.42	0.02	0.40	0.40	0.02	0.07	0.07	0.02	0.07	0.07
Sat Flow, veh/h	1757	1845	1521	1757	1845	1558	1757	1708	114	1757	1489	298
Grp Volume(v), veh/h	45	409	9	15	530	7	15	0	16	15	0	18
Grp Sat Flow(s),veh/h/ln	1757	1845	1521	1757	1845	1558	1757	0	1822	1757	0	1787
Q Serve(g_s), s	1.0	6.4	0.1	0.3	9.4	0.1	0.3	0.0	0.3	0.3	0.0	0.4
Cycle Q Clear(g_c), s	1.0	6.4	0.1	0.3	9.4	0.1	0.3	0.0	0.3	0.3	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	70	778	641	27	733	619	27	0	124	27	0	122
V/C Ratio(X)	0.65	0.53	0.01	0.55	0.72	0.01	0.55	0.00	0.13	0.55	0.00	0.15
Avail Cap(c_a), veh/h	182	1219	1005	182	1219	1030	182	0	1322	182	0	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	8.3	6.5	18.9	9.8	7.0	18.9	0.0	16.9	18.9	0.0	16.9
Incr Delay (d2), s/veh	3.7	0.8	0.0	6.4	1.9	0.0	6.4	0.0	0.2	6.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	0.1	0.2	5.1	0.0	0.2	0.0	0.2	0.2	0.0	0.2
LnGrp Delay(d),s/veh	21.9	9.1	6.5	25.3	11.8	7.0	25.3	0.0	17.1	25.3	0.0	17.1
LnGrp LOS	C	A	A	C	B	A	C		B	C		B
Approach Vol, veh/h		463			552			31			33	
Approach Delay, s/veh		10.3			12.1			21.1			20.8	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	21.3	5.1	7.1	6.0	20.3	5.1	7.1
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	4.0	25.5	4.0	28.0	4.0	25.5	4.0	28.0
Max Q Clear Time (g_c+I1), s	2.3	8.4	2.3	2.4	3.0	11.4	2.3	2.3
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	3.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	20	60	50	10	50
Future Vol, veh/h	80	20	60	50	10	50
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	123	31	92	77	15	77
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.7	8.2	8.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	80%	17%
Vol Thru, %	55%	0%	83%
Vol Right, %	45%	20%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	110	100	60
LT Vol	0	80	10
Through Vol	60	0	50
RT Vol	50	20	0
Lane Flow Rate	169	154	92
Geometry Grp	1	1	1
Degree of Util (X)	0.195	0.195	0.116
Departure Headway (Hd)	4.155	4.567	4.532
Convergence, Y/N	Yes	Yes	Yes
Cap	866	788	793
Service Time	2.168	2.583	2.548
HCM Lane V/C Ratio	0.195	0.195	0.116
HCM Control Delay	8.2	8.7	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.7	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1410	490	750	1230	40	1050	740	980	60	810	230
Future Volume (vph)	250	1410	490	750	1230	40	1050	740	980	60	810	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.94	0.91		0.94	0.86	1.00	0.97	0.86	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	6346	1568	4942	5009		4942	6346	1548	3400	6346	2718
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	6346	1568	4942	5009		4942	6346	1548	3400	6346	2718
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	347	1958	681	1042	1708	56	1458	1028	1361	83	1125	319
RTOR Reduction (vph)	0	0	26	0	2	0	0	0	319	0	0	241
Lane Group Flow (vph)	347	1958	655	1042	1762	0	1458	1028	1042	83	1125	78
Confl. Peds. (#/hr)						7						3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	2 3	1	6		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	21.7	46.1	82.1	30.0	54.4		30.0	55.6	55.6	16.0	41.6	41.6
Effective Green, g (s)	21.7	46.1	82.1	30.0	54.4		30.0	55.6	55.6	16.0	41.6	41.6
Actuated g/C Ratio	0.13	0.27	0.48	0.18	0.32		0.18	0.33	0.33	0.09	0.25	0.25
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	434	1723	758	873	1605		873	2079	507	320	1555	666
v/s Ratio Prot	0.10	0.31	0.42	c0.21	c0.35		c0.30	0.16		0.02	0.18	
v/s Ratio Perm									c0.67			0.03
v/c Ratio	0.80	1.14	0.86	1.19	1.10		1.67	0.49	2.05	0.26	0.72	0.12
Uniform Delay, d1	71.9	61.8	38.9	69.8	57.6		69.8	45.8	57.0	71.3	58.8	49.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	69.1	10.1	98.4	54.2		306.6	0.3	481.3	0.2	1.8	0.1
Delay (s)	81.2	130.9	48.9	168.2	111.9		376.5	46.0	538.4	71.5	60.6	49.9
Level of Service	F	F	D	F	F		F	D	F	E	E	D
Approach Delay (s)		106.4			132.8			345.4			58.9	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	188.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	169.7	Sum of lost time (s)	22.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1610	400	810	1030	590	110	490	360	570	570	100
Future Volume (vph)	180	1610	400	810	1030	590	110	490	360	570	570	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	4.0	5.8	5.8	5.3	5.7	5.7	5.3	5.7	5.7
Lane Util. Factor	0.97	0.91	0.88	0.94	0.91	1.00	0.94	0.91	0.88	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	2760	4942	5036	1568	4942	5036	2760	4942	5036	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	2760	4942	5036	1568	4942	5036	2760	4942	5036	1539
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	257	2300	571	1157	1471	843	157	700	514	814	814	143
RTOR Reduction (vph)	0	0	201	0	0	242	0	0	341	0	0	102
Lane Group Flow (vph)	257	2300	370	1157	1471	601	157	700	173	814	814	41
Confl. Peds. (#/hr)												7
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.0	49.7	49.7	25.0	60.9	60.9	10.0	25.9	25.9	26.9	42.8	42.8
Effective Green, g (s)	12.0	49.7	49.7	25.0	60.9	60.9	10.0	25.9	25.9	26.9	42.8	42.8
Actuated g/C Ratio	0.08	0.34	0.34	0.17	0.41	0.41	0.07	0.18	0.18	0.18	0.29	0.29
Clearance Time (s)	5.3	5.3	5.3	4.0	5.8	5.8	5.3	5.7	5.7	5.3	5.7	5.7
Vehicle Extension (s)	2.0	4.0	4.0	2.0	2.0	2.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	276	1693	928	835	2075	646	334	882	483	899	1458	445
v/s Ratio Prot	0.08	c0.46		c0.23	0.29		0.03	c0.14		c0.16	0.16	
v/s Ratio Perm			0.13			0.38			0.06			0.03
v/c Ratio	0.93	1.36	0.40	1.39	0.71	0.93	0.47	0.79	0.36	0.91	0.56	0.09
Uniform Delay, d1	67.5	49.1	37.6	61.4	36.1	41.4	66.3	58.4	53.6	59.2	44.5	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.8	165.3	0.4	181.0	0.9	20.0	0.4	5.2	0.6	12.2	0.6	0.1
Delay (s)	103.3	214.3	38.0	242.4	37.0	61.4	66.7	63.6	54.3	71.4	45.1	38.5
Level of Service	F	F	D	F	D	E	E	E	D	E	D	D
Approach Delay (s)		173.0			111.4			60.5			56.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	114.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	147.8	Sum of lost time (s)	22.1
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	220	70	270	210	86	30	529	100	173	1267	140
Future Volume (veh/h)	120	220	70	270	210	86	30	529	100	173	1267	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	140	256	17	314	244	88	35	615	51	201	1473	101
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	358	298	369	269	97	76	2352	717	161	2597	784
Arrive On Green	0.09	0.19	0.19	0.11	0.21	0.21	0.04	0.47	0.47	0.09	0.52	0.52
Sat Flow, veh/h	1757	1845	1535	3408	1289	465	1757	5036	1535	1757	5036	1521
Grp Volume(v), veh/h	140	256	17	314	0	332	35	615	51	201	1473	101
Grp Sat Flow(s),veh/h/ln	1757	1845	1535	1704	0	1755	1757	1679	1535	1757	1679	1521
Q Serve(g_s), s	10.7	17.7	1.2	12.3	0.0	25.1	2.6	10.1	2.5	12.5	27.2	4.7
Cycle Q Clear(g_c), s	10.7	17.7	1.2	12.3	0.0	25.1	2.6	10.1	2.5	12.5	27.2	4.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	358	298	369	0	366	76	2352	717	161	2597	784
V/C Ratio(X)	0.85	0.72	0.06	0.85	0.00	0.91	0.46	0.26	0.07	1.24	0.57	0.13
Avail Cap(c_a), veh/h	252	507	422	489	0	483	103	2352	717	161	2597	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.50	0.00	0.50	0.97	0.97	0.97	0.48	0.48	0.48
Uniform Delay (d), s/veh	60.7	51.3	44.7	59.6	0.0	52.5	63.5	22.0	20.0	61.8	22.5	17.1
Incr Delay (d2), s/veh	13.2	2.1	0.1	5.2	0.0	9.3	3.1	0.3	0.2	132.5	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	9.2	0.5	6.1	0.0	13.1	1.3	4.7	1.1	12.0	12.7	2.0
LnGrp Delay(d),s/veh	73.9	53.4	44.7	64.7	0.0	61.9	66.7	22.3	20.2	194.3	23.0	17.2
LnGrp LOS	E	D	D	E		E	E	C	C	F	C	B
Approach Vol, veh/h		413			646			701			1775	
Approach Delay, s/veh		60.0			63.3			24.3			42.0	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	31.0	10.4	75.4	17.2	33.0	17.0	68.8
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	19.5	37.4	8.0	52.2	19.5	37.4	12.5	* 48
Max Q Clear Time (g_c+I1), s	14.3	19.7	4.6	29.2	12.7	27.1	14.5	12.1
Green Ext Time (p_c), s	0.4	1.1	0.0	15.2	0.1	1.1	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	44.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	383	10	89	456	52	20	60	51	84	110	100
Future Volume (veh/h)	80	383	10	89	456	52	20	60	51	84	110	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	108	518	13	120	616	28	27	81	43	114	149	109
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	137	721	18	154	761	632	41	178	95	145	218	159
Arrive On Green	0.08	0.40	0.40	0.09	0.41	0.41	0.02	0.16	0.16	0.08	0.22	0.22
Sat Flow, veh/h	1757	1790	45	1757	1845	1531	1757	1107	588	1757	991	725
Grp Volume(v), veh/h	108	0	531	120	616	28	27	0	124	114	0	258
Grp Sat Flow(s),veh/h/ln	1757	0	1835	1757	1845	1531	1757	0	1695	1757	0	1717
Q Serve(g_s), s	4.2	0.0	16.9	4.6	20.5	0.8	1.1	0.0	4.6	4.4	0.0	9.6
Cycle Q Clear(g_c), s	4.2	0.0	16.9	4.6	20.5	0.8	1.1	0.0	4.6	4.4	0.0	9.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.35	1.00		0.42
Lane Grp Cap(c), veh/h	137	0	740	154	761	632	41	0	273	145	0	377
V/C Ratio(X)	0.79	0.00	0.72	0.78	0.81	0.04	0.66	0.00	0.45	0.79	0.00	0.68
Avail Cap(c_a), veh/h	265	0	1241	606	1247	1035	190	0	805	190	0	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	17.4	31.0	18.0	12.2	33.7	0.0	26.4	31.3	0.0	24.9
Incr Delay (d2), s/veh	3.7	0.0	1.9	3.2	3.0	0.0	6.5	0.0	0.4	11.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	8.9	2.4	10.9	0.3	0.6	0.0	2.2	2.6	0.0	4.6
LnGrp Delay(d),s/veh	35.2	0.0	19.3	34.2	21.0	12.3	40.1	0.0	26.9	42.4	0.0	25.7
LnGrp LOS	D		B	C	C	B	D		C	D		C
Approach Vol, veh/h		639			764			151			372	
Approach Delay, s/veh		22.0			22.7			29.2			30.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	33.0	6.1	19.8	9.9	33.7	10.2	15.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	6.6	18.9	3.1	11.6	6.2	22.5	6.4	6.6
Green Ext Time (p_c), s	0.1	5.2	0.0	0.8	0.0	6.2	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	383	87	287	383	20	79	32	82	30	131	110
Future Volume (veh/h)	82	383	87	287	383	20	79	32	82	30	131	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.96	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	111	518	40	388	518	13	107	43	80	41	177	114
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	142	596	495	425	893	752	202	144	267	331	266	171
Arrive On Green	0.08	0.32	0.32	0.24	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1757	1845	1533	1757	1845	1553	1061	561	1043	1229	1039	669
Grp Volume(v), veh/h	111	518	40	388	518	13	107	0	123	41	0	291
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1757	1845	1553	1061	0	1604	1229	0	1708
Q Serve(g_s), s	4.8	20.7	1.4	16.8	15.7	0.3	7.9	0.0	4.8	2.2	0.0	11.9
Cycle Q Clear(g_c), s	4.8	20.7	1.4	16.8	15.7	0.3	19.8	0.0	4.8	7.0	0.0	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	1.00		0.39
Lane Grp Cap(c), veh/h	142	596	495	425	893	752	202	0	411	331	0	437
V/C Ratio(X)	0.78	0.87	0.08	0.91	0.58	0.02	0.53	0.00	0.30	0.12	0.00	0.67
Avail Cap(c_a), veh/h	450	708	589	450	893	752	202	0	411	331	0	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	24.9	18.4	28.8	14.5	10.5	34.9	0.0	23.4	26.2	0.0	26.1
Incr Delay (d2), s/veh	3.5	10.7	0.1	21.5	1.2	0.0	3.5	0.0	0.6	0.2	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	12.3	0.6	10.6	8.2	0.1	2.5	0.0	2.2	0.8	0.0	6.1
LnGrp Delay(d),s/veh	38.7	35.6	18.5	50.4	15.6	10.5	38.4	0.0	24.0	26.5	0.0	30.3
LnGrp LOS	D	D	B	D	B	B	D		C	C		C
Approach Vol, veh/h		669			919			230			332	
Approach Delay, s/veh		35.1			30.2			30.7			29.9	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.4	30.2		24.5	10.8	42.8		24.5
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.6	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	18.8	22.7		13.9	6.8	17.7		21.8
Green Ext Time (p_c), s	0.1	2.6		1.3	0.1	3.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	376	63	90	572	30	66	97	60	20	105	102
Future Volume (veh/h)	66	376	63	90	572	30	66	97	60	20	105	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.96	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	96	545	32	130	829	15	96	141	70	29	152	119
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	139	666	553	164	692	565	124	340	169	42	226	177
Arrive On Green	0.08	0.36	0.36	0.09	0.37	0.37	0.07	0.30	0.30	0.02	0.25	0.25
Sat Flow, veh/h	1757	1845	1533	1757	1845	1507	1757	1146	569	1757	903	707
Grp Volume(v), veh/h	96	545	32	130	829	15	96	0	211	29	0	271
Grp Sat Flow(s),veh/h/ln	1757	1845	1533	1757	1845	1507	1757	0	1714	1757	0	1611
Q Serve(g_s), s	4.3	21.4	1.1	5.8	30.0	0.5	4.3	0.0	7.9	1.3	0.0	12.1
Cycle Q Clear(g_c), s	4.3	21.4	1.1	5.8	30.0	0.5	4.3	0.0	7.9	1.3	0.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.44
Lane Grp Cap(c), veh/h	139	666	553	164	692	565	124	0	509	42	0	403
V/C Ratio(X)	0.69	0.82	0.06	0.79	1.20	0.03	0.78	0.00	0.41	0.69	0.00	0.67
Avail Cap(c_a), veh/h	439	692	575	439	692	565	439	0	514	439	0	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	23.2	16.7	35.5	25.0	15.8	36.6	0.0	22.5	38.8	0.0	27.0
Incr Delay (d2), s/veh	2.3	7.9	0.1	3.2	103.0	0.0	3.9	0.0	0.5	7.5	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	12.4	0.5	3.0	35.0	0.2	2.2	0.0	3.8	0.7	0.0	5.7
LnGrp Delay(d),s/veh	38.1	31.1	16.8	38.7	128.0	15.8	40.5	0.0	23.1	46.2	0.0	29.8
LnGrp LOS	D	C	B	D	F	B	D		C	D		C
Approach Vol, veh/h		673			974			307			300	
Approach Delay, s/veh		31.4			114.3			28.5			31.4	
Approach LOS		C			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.9	9.6	24.5	10.8	35.0	5.9	28.3
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	7.8	23.4	6.3	14.1	6.3	32.0	3.3	9.9
Green Ext Time (p_c), s	0.1	2.5	0.1	1.2	0.1	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.8
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	800	280	749	1420	69	690	550	834	57	1350	170
Future Volume (veh/h)	120	800	280	749	1420	69	690	550	834	57	1350	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	128	851	267	797	1511	70	734	585	572	61	1436	79
Adj No. of Lanes	2	4	1	3	3	0	3	4	1	2	4	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	355	1453	612	873	1483	69	817	2246	555	330	1815	769
Arrive On Green	0.10	0.23	0.23	0.18	0.30	0.30	0.16	0.35	0.35	0.10	0.29	0.29
Sat Flow, veh/h	3408	6346	1546	4954	4928	228	4954	6346	1568	3408	6346	2688
Grp Volume(v), veh/h	128	851	267	797	1029	552	734	585	572	61	1436	79
Grp Sat Flow(s),veh/h/ln	1704	1586	1546	1651	1679	1799	1651	1586	1568	1704	1586	1344
Q Serve(g_s), s	5.3	18.3	19.3	24.1	46.0	46.0	22.2	10.0	54.1	2.5	31.9	3.3
Cycle Q Clear(g_c), s	5.3	18.3	19.3	24.1	46.0	46.0	22.2	10.0	54.1	2.5	31.9	3.3
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	1453	612	873	1011	541	817	2246	555	330	1815	769
V/C Ratio(X)	0.36	0.59	0.44	0.91	1.02	1.02	0.90	0.26	1.03	0.18	0.79	0.10
Avail Cap(c_a), veh/h	669	1910	724	973	1011	541	973	2246	555	669	1910	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	52.5	33.9	61.8	53.4	53.4	62.6	35.1	49.4	63.5	50.4	40.1
Incr Delay (d2), s/veh	0.2	0.4	0.5	11.2	33.1	43.5	9.0	0.1	46.3	0.1	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.1	8.4	11.9	25.8	29.3	10.8	4.4	30.5	1.2	14.3	1.2
LnGrp Delay(d),s/veh	63.9	52.8	34.4	73.0	86.5	96.9	71.5	35.2	95.6	63.6	52.8	40.2
LnGrp LOS	E	D	C	E	F	F	E	D	F	E	D	D
Approach Vol, veh/h		1246			2378			1891			1576	
Approach Delay, s/veh		50.0			84.4			67.6			52.5	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.9	41.0	30.2	49.7	20.9	52.0	19.8	60.1
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	26.1	21.3	24.2	33.9	7.3	48.0	4.5	56.1
Green Ext Time (p_c), s	0.8	6.8	1.0	9.0	0.2	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1596	40	10	1881	30	30	10	10	70	10	307
Future Volume (veh/h)	75	1596	40	10	1881	30	30	10	10	70	10	307
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	85	1814	26	11	2138	18	34	11	1	80	11	256
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	102	2883	878	19	2644	805	44	272	25	102	13	298
Arrive On Green	0.06	0.57	0.57	0.01	0.53	0.53	0.02	0.16	0.16	0.06	0.20	0.20
Sat Flow, veh/h	1757	5036	1535	1757	5036	1533	1757	1666	151	1757	65	1513
Grp Volume(v), veh/h	85	1814	26	11	2138	18	34	0	12	80	0	267
Grp Sat Flow(s),veh/h/ln	1757	1679	1535	1757	1679	1533	1757	0	1818	1757	0	1578
Q Serve(g_s), s	4.6	23.3	0.7	0.6	33.9	0.5	1.9	0.0	0.5	4.3	0.0	15.8
Cycle Q Clear(g_c), s	4.6	23.3	0.7	0.6	33.9	0.5	1.9	0.0	0.5	4.3	0.0	15.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		0.96
Lane Grp Cap(c), veh/h	102	2883	878	19	2644	805	44	0	297	102	0	310
V/C Ratio(X)	0.84	0.63	0.03	0.59	0.81	0.02	0.78	0.00	0.04	0.79	0.00	0.86
Avail Cap(c_a), veh/h	102	2883	878	73	2760	840	122	0	771	118	0	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.1	13.8	9.0	47.6	18.9	11.0	46.9	0.0	34.1	45.0	0.0	37.5
Incr Delay (d2), s/veh	40.5	0.5	0.0	10.6	1.9	0.0	10.7	0.0	0.0	21.5	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	10.9	0.3	0.3	16.1	0.2	1.0	0.0	0.3	2.7	0.0	7.1
LnGrp Delay(d),s/veh	85.6	14.3	9.0	58.3	20.9	11.0	57.6	0.0	34.1	66.5	0.0	40.3
LnGrp LOS	F	B	A	E	C	B	E		C	E		D
Approach Vol, veh/h		1925			2167			46			347	
Approach Delay, s/veh		17.4			21.0			51.5			46.3	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	60.7	6.9	23.6	10.1	56.1	10.1	20.4
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	1.0	54.6	6.7	40.8	5.6	53.0	6.5	41.0
Max Q Clear Time (g_c+I1), s	2.6	25.3	3.9	17.8	6.6	35.9	6.3	2.5
Green Ext Time (p_c), s	0.0	20.6	0.0	1.2	0.0	14.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1556	50	235	1861	0	40	10	40	0	0	0
Future Volume (veh/h)	10	1556	50	235	1861	0	40	10	40	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	11	1768	26	267	2115	0	45	11	4	0	0	-10
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	25	2457	746	323	3313	1031	154	127	107	3	0	280
Arrive On Green	0.01	0.49	0.49	0.18	0.66	0.00	0.05	0.07	0.07	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1530	1757	5036	1568	3408	1845	1552	1757	1845	0
Grp Volume(v), veh/h	11	1768	26	267	2115	0	45	11	4	0	-10	-10
Grp Sat Flow(s),veh/h/ln	1757	1679	1530	1757	1679	1568	1704	1845	1552	1757	1845	1568
Q Serve(g_s), s	0.3	15.4	0.5	8.1	13.8	0.0	0.7	0.3	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	15.4	0.5	8.1	13.8	0.0	0.7	0.3	0.1	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	25	2457	746	323	3313	1031	154	127	107	3	0	0
V/C Ratio(X)	0.45	0.72	0.03	0.83	0.64	0.00	0.29	0.09	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	632	2629	799	632	3313	1031	1411	797	671	632	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	11.2	7.4	21.8	5.6	0.0	25.7	24.2	24.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	4.6	1.0	0.0	2.1	0.5	0.0	0.4	0.1	0.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.3	0.2	4.1	6.4	0.0	0.3	0.2	0.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	31.8	12.2	7.4	23.9	6.1	0.0	26.1	24.3	24.2	0.0	0.0	0.0
LnGrp LOS	C	B	A	C	A		C	C	C			
Approach Vol, veh/h		1805			2382			60			-20	
Approach Delay, s/veh		12.3			8.1			25.6			0.0	
Approach LOS		B			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	32.4	7.0	1.4	5.3	41.8	0.0	8.4
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.0	29.0	23.0	20.0	20.0	29.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	10.1	17.4	2.7	0.0	2.3	15.8	0.0	2.3
Green Ext Time (p_c), s	0.3	9.5	0.0	0.0	0.0	11.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	617	110	10	1416	24	30	0	10	42	10	437
Future Volume (veh/h)	108	617	110	10	1416	24	30	0	10	42	10	437
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	124	709	69	11	1628	12	34	0	3	48	11	102
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	427	2646	810	93	2152	654	144	0	429	90	23	214
Arrive On Green	0.13	0.53	0.53	0.03	0.43	0.43	0.04	0.00	0.14	0.05	0.15	0.15
Sat Flow, veh/h	3408	5036	1542	3408	5036	1530	3514	0	3067	1757	154	1428
Grp Volume(v), veh/h	124	709	69	11	1628	12	34	0	3	48	0	113
Grp Sat Flow(s),veh/h/ln	1704	1679	1542	1704	1679	1530	1757	0	1534	1757	0	1582
Q Serve(g_s), s	2.4	5.7	1.6	0.2	20.1	0.3	0.7	0.0	0.1	2.0	0.0	4.8
Cycle Q Clear(g_c), s	2.4	5.7	1.6	0.2	20.1	0.3	0.7	0.0	0.1	2.0	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	427	2646	810	93	2152	654	144	0	429	90	0	237
V/C Ratio(X)	0.29	0.27	0.09	0.12	0.76	0.02	0.24	0.00	0.01	0.54	0.00	0.48
Avail Cap(c_a), veh/h	929	2646	810	929	2334	709	958	0	836	479	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	9.6	8.6	34.8	17.8	12.1	34.1	0.0	27.2	34.0	0.0	28.5
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.2	1.5	0.0	0.3	0.0	0.0	1.8	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.6	0.7	0.1	9.5	0.1	0.3	0.0	0.0	1.0	0.0	2.2
LnGrp Delay(d),s/veh	29.2	9.7	8.7	35.0	19.3	12.1	34.4	0.0	27.2	35.8	0.0	30.6
LnGrp LOS	C	A	A	D	B	B	C		C	D		C
Approach Vol, veh/h		902			1651			37			161	
Approach Delay, s/veh		12.3			19.3			33.8			32.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.5	43.8	7.5	15.5	13.7	36.6	8.2	14.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	20.0	34.0	20.0	20.0	20.0	34.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.2	7.7	2.7	6.8	4.4	22.1	4.0	2.1
Green Ext Time (p_c), s	0.0	7.1	0.0	0.6	0.2	9.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1080	346	290	700	620	481	573	400	530	1376	359
Future Volume (veh/h)	183	1080	346	290	700	620	481	573	400	530	1376	359
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	195	1149	101	309	745	429	512	610	185	564	1464	243
Adj No. of Lanes	2	3	2	3	3	1	3	3	2	3	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	290	1377	755	422	1321	411	511	1665	901	662	1819	556
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.33	0.33	0.13	0.36	0.36
Sat Flow, veh/h	3408	5036	2760	4954	5036	1568	4954	5036	2725	4954	5036	1541
Grp Volume(v), veh/h	195	1149	101	309	745	429	512	610	185	564	1464	243
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1651	1679	1568	1651	1679	1362	1651	1679	1541
Q Serve(g_s), s	6.5	25.2	3.2	7.1	15.0	30.8	12.1	10.8	5.7	13.1	30.7	14.0
Cycle Q Clear(g_c), s	6.5	25.2	3.2	7.1	15.0	30.8	12.1	10.8	5.7	13.1	30.7	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1377	755	422	1321	411	511	1665	901	662	1819	556
V/C Ratio(X)	0.67	0.83	0.13	0.73	0.56	1.04	1.00	0.37	0.21	0.85	0.80	0.44
Avail Cap(c_a), veh/h	290	1398	766	422	1321	411	511	1665	901	836	1930	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	40.1	32.2	52.4	37.5	43.3	52.6	29.9	28.2	49.7	33.8	28.4
Incr Delay (d2), s/veh	4.9	4.7	0.1	5.7	0.3	56.0	40.5	0.2	0.2	5.8	2.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	12.3	1.3	3.5	7.0	19.7	7.4	5.1	2.2	6.3	14.7	6.1
LnGrp Delay(d),s/veh	57.0	44.8	32.3	58.0	37.8	99.3	93.1	30.1	28.4	55.5	36.4	29.2
LnGrp LOS	E	D	C	E	D	F	F	C	C	E	D	C
Approach Vol, veh/h		1445			1483			1307			2271	
Approach Delay, s/veh		45.6			59.8			54.6			40.4	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.9	17.4	48.1	15.3	36.6	21.0	44.5
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	10.0	* 33	12.1	45.0	10.0	30.8	19.8	37.3
Max Q Clear Time (g_c+I1), s	9.1	27.2	14.1	32.7	8.5	32.8	15.1	12.8
Green Ext Time (p_c), s	0.1	3.9	0.0	9.4	0.1	0.0	0.6	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	48.8
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	270	0	0	0	390	833	0	0	1247	140
Future Volume (veh/h)	60	0	270	0	0	0	390	833	0	0	1247	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	77	0	31	0	0	0	500	1068	0	0	1599	126
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	194	0	171	0	2	0	453	4154	0	0	1798	791
Arrive On Green	0.06	0.00	0.06	0.00	0.00	0.00	0.26	0.82	0.00	0.00	0.51	0.51
Sat Flow, veh/h	3514	0	3102	0	1845	0	1757	5202	0	0	3597	1542
Grp Volume(v), veh/h	77	0	31	0	0	0	500	1068	0	0	1599	126
Grp Sat Flow(s),veh/h/ln	1757	0	1551	0	1845	0	1757	1679	0	0	1752	1542
Q Serve(g_s), s	1.8	0.0	0.8	0.0	0.0	0.0	21.5	3.9	0.0	0.0	34.1	3.6
Cycle Q Clear(g_c), s	1.8	0.0	0.8	0.0	0.0	0.0	21.5	3.9	0.0	0.0	34.1	3.6
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	194	0	171	0	2	0	453	4154	0	0	1798	791
V/C Ratio(X)	0.40	0.00	0.18	0.00	0.00	0.00	1.10	0.26	0.00	0.00	0.89	0.16
Avail Cap(c_a), veh/h	1391	0	1228	0	686	0	453	4228	0	0	1850	814
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	0.0	37.6	0.0	0.0	0.0	30.9	1.6	0.0	0.0	18.2	10.8
Incr Delay (d2), s/veh	1.9	0.0	0.7	0.0	0.0	0.0	73.5	0.0	0.0	0.0	5.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.4	0.0	0.0	0.0	19.6	1.8	0.0	0.0	17.7	1.6
LnGrp Delay(d),s/veh	39.9	0.0	38.3	0.0	0.0	0.0	104.4	1.7	0.0	0.0	24.0	10.9
LnGrp LOS	D		D				F	A			C	B
Approach Vol, veh/h		108			0			1568			1725	
Approach Delay, s/veh		39.5			0.0			34.4			23.1	
Approach LOS		D						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		9.6	26.0	47.8		0.0		73.8
Change Period (Y+Rc), s		5.0	4.5	5.0		6.0		5.0
Max Green Setting (Gmax), s		33.0	21.5	44.0		31.0		70.0
Max Q Clear Time (g_c+I1), s		3.8	23.5	36.1		0.0		5.9
Green Ext Time (p_c), s		0.5	0.0	6.7		0.0		13.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	200	50	170	420	92	110	515	100	154	1400	390
Future Volume (veh/h)	100	200	50	170	420	92	110	515	100	154	1400	390
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	118	235	19	200	494	102	129	606	37	181	1647	292
Adj No. of Lanes	2	1	1	2	1	0	2	3	1	1	3	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	167	611	507	253	527	109	178	1655	501	206	1983	602
Arrive On Green	0.05	0.33	0.33	0.07	0.36	0.36	0.05	0.33	0.33	0.12	0.39	0.39
Sat Flow, veh/h	3408	1845	1531	3408	1476	305	3408	5036	1523	1757	5036	1528
Grp Volume(v), veh/h	118	235	19	200	0	596	129	606	37	181	1647	292
Grp Sat Flow(s),veh/h/ln	1704	1845	1531	1704	0	1781	1704	1679	1523	1757	1679	1528
Q Serve(g_s), s	4.4	12.7	1.1	7.5	0.0	42.1	4.8	11.9	2.2	13.2	38.3	18.6
Cycle Q Clear(g_c), s	4.4	12.7	1.1	7.5	0.0	42.1	4.8	11.9	2.2	13.2	38.3	18.6
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	611	507	253	0	635	178	1655	501	206	1983	602
V/C Ratio(X)	0.71	0.38	0.04	0.79	0.00	0.94	0.72	0.37	0.07	0.88	0.83	0.49
Avail Cap(c_a), veh/h	186	611	507	343	0	671	197	1655	501	242	1983	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.61	0.00	0.61	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	33.3	29.4	59.2	0.0	40.4	60.7	33.3	30.0	56.5	35.5	29.5
Incr Delay (d2), s/veh	9.4	0.7	0.1	4.6	0.0	14.7	9.8	0.6	0.3	25.0	4.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.6	0.5	3.7	0.0	23.3	2.5	5.6	1.0	7.8	18.5	8.3
LnGrp Delay(d),s/veh	70.3	34.0	29.5	63.8	0.0	55.1	70.4	33.9	30.3	81.5	39.7	32.3
LnGrp LOS	E	C	C	E		E	E	C	C	F	D	C
Approach Vol, veh/h		372			796			772			2120	
Approach Delay, s/veh		45.3			57.3			39.8			42.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.2	48.1	11.3	56.5	10.9	51.4	19.7	48.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	13.5	43.0	7.5	47.1	7.1	49.0	17.9	36.7
Max Q Clear Time (g_c+I1), s	9.5	14.7	6.8	40.3	6.4	44.1	15.2	13.9
Green Ext Time (p_c), s	0.2	2.3	0.0	5.9	0.0	2.3	0.1	5.5

Intersection Summary	
HCM 2010 Ctrl Delay	45.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	180	54	20	290	80	42	140	20	60	140	250
Future Volume (veh/h)	190	180	54	20	290	80	42	140	20	60	140	250
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.94	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	317	300	83	33	483	58	70	233	28	100	233	90
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	355	662	183	45	558	460	90	313	38	129	400	340
Arrive On Green	0.20	0.48	0.48	0.03	0.30	0.30	0.05	0.19	0.19	0.07	0.22	0.22
Sat Flow, veh/h	1757	1383	383	1757	1845	1519	1757	1604	193	1757	1845	1568
Grp Volume(v), veh/h	317	0	383	33	483	58	70	0	261	100	233	90
Grp Sat Flow(s),veh/h/ln	1757	0	1765	1757	1845	1519	1757	0	1797	1757	1845	1568
Q Serve(g_s), s	14.3	0.0	11.8	1.5	20.2	2.3	3.2	0.0	11.2	4.6	9.2	3.9
Cycle Q Clear(g_c), s	14.3	0.0	11.8	1.5	20.2	2.3	3.2	0.0	11.2	4.6	9.2	3.9
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	355	0	846	45	558	460	90	0	350	129	400	340
V/C Ratio(X)	0.89	0.00	0.45	0.73	0.87	0.13	0.78	0.00	0.75	0.78	0.58	0.26
Avail Cap(c_a), veh/h	431	0	846	431	679	559	431	0	441	431	453	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	0.0	14.1	39.4	26.8	20.6	38.2	0.0	30.9	37.1	28.6	26.5
Incr Delay (d2), s/veh	16.1	0.0	0.5	8.0	10.6	0.2	5.2	0.0	6.2	3.8	2.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	5.9	0.8	11.8	1.0	1.7	0.0	6.1	2.4	4.9	1.7
LnGrp Delay(d),s/veh	47.8	0.0	14.7	47.4	37.4	20.8	43.4	0.0	37.1	40.9	30.7	27.1
LnGrp LOS	D		B	D	D	C	D		D	D	C	C
Approach Vol, veh/h		700			574			331			423	
Approach Delay, s/veh		29.6			36.3			38.5			32.3	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	44.1	8.7	22.2	21.0	29.7	10.5	20.4
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	3.5	13.8	5.2	11.2	16.3	22.2	6.6	13.2
Green Ext Time (p_c), s	0.0	2.8	0.1	1.5	0.2	2.5	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	33.5
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	190	40	30	230	100	50	124	40	90	181	110
Future Volume (veh/h)	30	190	40	30	230	100	50	124	40	90	181	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.92	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	288	13	45	348	5	76	188	53	136	274	152
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	62	787	346	62	787	338	97	441	124	175	397	220
Arrive On Green	0.04	0.22	0.22	0.04	0.22	0.22	0.06	0.33	0.33	0.10	0.37	0.37
Sat Flow, veh/h	1757	3505	1544	1757	3505	1504	1757	1357	383	1757	1075	596
Grp Volume(v), veh/h	45	288	13	45	348	5	76	0	241	136	0	426
Grp Sat Flow(s),veh/h/ln	1757	1752	1544	1757	1752	1504	1757	0	1740	1757	0	1672
Q Serve(g_s), s	1.5	4.1	0.4	1.5	5.0	0.2	2.5	0.0	6.4	4.4	0.0	12.7
Cycle Q Clear(g_c), s	1.5	4.1	0.4	1.5	5.0	0.2	2.5	0.0	6.4	4.4	0.0	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.36
Lane Grp Cap(c), veh/h	62	787	346	62	787	338	97	0	566	175	0	618
V/C Ratio(X)	0.72	0.37	0.04	0.72	0.44	0.01	0.78	0.00	0.43	0.78	0.00	0.69
Avail Cap(c_a), veh/h	599	1791	789	599	1791	769	599	0	711	599	0	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	19.2	17.8	28.0	19.6	17.7	27.4	0.0	15.5	25.8	0.0	15.7
Incr Delay (d2), s/veh	5.8	0.4	0.1	5.8	0.6	0.0	5.0	0.0	0.7	2.8	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.0	0.2	0.8	2.5	0.1	1.3	0.0	3.1	2.3	0.0	6.3
LnGrp Delay(d),s/veh	33.8	19.6	17.9	33.8	20.2	17.7	32.4	0.0	16.2	28.5	0.0	18.7
LnGrp LOS	C	B	B	C	C	B	C		B	C		B
Approach Vol, veh/h		346			398			317			562	
Approach Delay, s/veh		21.4			21.7			20.1			21.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	18.2	7.8	26.2	6.6	18.2	10.4	23.6
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	3.5	6.1	4.5	14.7	3.5	7.0	6.4	8.4
Green Ext Time (p_c), s	0.0	2.5	0.1	2.6	0.0	2.9	0.1	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	236	256	335	292	120	273	916	117	120	1694	347
Future Volume (veh/h)	144	236	256	335	292	120	273	916	117	120	1694	347
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	176	288	99	409	356	51	333	1117	52	146	2066	286
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	242	553	743	363	618	521	319	1851	573	169	1847	559
Arrive On Green	0.07	0.30	0.30	0.11	0.34	0.34	0.09	0.37	0.37	0.10	0.37	0.37
Sat Flow, veh/h	3408	1845	2479	3408	1845	1555	3408	5036	1559	1757	5036	1525
Grp Volume(v), veh/h	176	288	99	409	356	51	333	1117	52	146	2066	286
Grp Sat Flow(s),veh/h/ln	1704	1845	1240	1704	1845	1555	1704	1679	1559	1757	1679	1525
Q Serve(g_s), s	7.1	18.3	4.1	15.0	22.4	3.2	13.2	25.4	3.1	11.5	51.7	20.6
Cycle Q Clear(g_c), s	7.1	18.3	4.1	15.0	22.4	3.2	13.2	25.4	3.1	11.5	51.7	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	553	743	363	618	521	319	1851	573	169	1847	559
V/C Ratio(X)	0.73	0.52	0.13	1.13	0.58	0.10	1.04	0.60	0.09	0.86	1.12	0.51
Avail Cap(c_a), veh/h	254	606	814	363	665	561	319	1851	573	261	1847	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.1	41.0	36.0	63.0	38.6	32.2	63.9	36.2	29.2	62.7	44.6	34.8
Incr Delay (d2), s/veh	8.2	1.1	0.1	86.5	1.4	0.1	62.1	0.7	0.1	10.8	61.3	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.4	1.4	11.4	11.6	1.4	9.0	11.9	1.3	6.1	34.4	8.8
LnGrp Delay(d),s/veh	72.3	42.0	36.1	149.5	40.0	32.3	126.0	36.9	29.3	73.5	105.9	35.9
LnGrp LOS	E	D	D	F	D	C	F	D	C	E	F	D
Approach Vol, veh/h		563			816			1502			2498	
Approach Delay, s/veh		50.5			94.4			56.4			96.0	
Approach LOS		D			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	47.2	17.7	57.0	14.0	52.3	17.6	57.1
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	15.0	46.3	13.2	51.7	10.5	50.8	20.9	44.5
Max Q Clear Time (g_c+I1), s	17.0	20.3	15.2	53.7	9.1	24.4	13.5	27.4
Green Ext Time (p_c), s	0.0	3.1	0.0	0.0	0.0	3.4	0.1	9.1

Intersection Summary	
HCM 2010 Ctrl Delay	79.9
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	461	36	58	504	10	23	10	65	10	10	60
Future Volume (veh/h)	20	461	36	58	504	10	23	10	65	10	10	60
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	25	584	23	73	638	7	29	13	11	13	13	10
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	42	751	619	94	806	665	48	94	80	23	84	65
Arrive On Green	0.02	0.41	0.41	0.05	0.44	0.44	0.03	0.10	0.10	0.01	0.09	0.09
Sat Flow, veh/h	1757	1845	1520	1757	1845	1521	1757	911	771	1757	940	723
Grp Volume(v), veh/h	25	584	23	73	638	7	29	0	24	13	0	23
Grp Sat Flow(s),veh/h/ln	1757	1845	1520	1757	1845	1521	1757	0	1682	1757	0	1663
Q Serve(g_s), s	0.6	12.0	0.4	1.8	13.0	0.1	0.7	0.0	0.6	0.3	0.0	0.6
Cycle Q Clear(g_c), s	0.6	12.0	0.4	1.8	13.0	0.1	0.7	0.0	0.6	0.3	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.43
Lane Grp Cap(c), veh/h	42	751	619	94	806	665	48	0	174	23	0	149
V/C Ratio(X)	0.59	0.78	0.04	0.77	0.79	0.01	0.61	0.00	0.14	0.55	0.00	0.15
Avail Cap(c_a), veh/h	160	1048	864	184	1073	885	160	0	1075	160	0	1062
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	11.3	7.8	20.5	10.6	7.0	21.1	0.0	17.9	21.5	0.0	18.4
Incr Delay (d2), s/veh	4.9	3.1	0.0	5.0	3.6	0.0	4.6	0.0	0.1	7.4	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.7	0.2	1.0	7.4	0.0	0.4	0.0	0.3	0.2	0.0	0.3
LnGrp Delay(d),s/veh	26.1	14.4	7.9	25.4	14.2	7.0	25.7	0.0	18.0	28.9	0.0	18.6
LnGrp LOS	C	B	A	C	B	A	C		B	C		B
Approach Vol, veh/h		632			718			53			36	
Approach Delay, s/veh		14.6			15.3			22.2			22.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	22.8	5.7	8.4	5.5	24.2	5.1	9.0
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	4.6	24.9	4.0	28.0	4.0	25.5	4.0	28.0
Max Q Clear Time (g_c+I1), s	3.8	14.0	2.7	2.6	2.6	15.0	2.3	2.6
Green Ext Time (p_c), s	0.0	3.8	0.0	0.0	0.0	4.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	247	20	71	44	20	149
Future Vol, veh/h	247	20	71	44	20	149
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	325	26	93	58	26	196
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	12.8	9.3	10.5
HCM LOS	B	A	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	93%	12%
Vol Thru, %	62%	0%	88%
Vol Right, %	38%	7%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	115	267	169
LT Vol	0	247	20
Through Vol	71	0	149
RT Vol	44	20	0
Lane Flow Rate	151	351	222
Geometry Grp	1	1	1
Degree of Util (X)	0.207	0.488	0.314
Departure Headway (Hd)	4.929	4.996	5.08
Convergence, Y/N	Yes	Yes	Yes
Cap	722	717	703
Service Time	3.008	3.066	3.153
HCM Lane V/C Ratio	0.209	0.49	0.316
HCM Control Delay	9.3	12.8	10.5
HCM Lane LOS	A	B	B
HCM 95th-tile Q	0.8	2.7	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	100	80	110	170	143	40	801	116	74	695	30
Future Volume (veh/h)	70	100	80	110	170	143	40	801	116	74	695	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	99	141	31	155	239	176	56	1128	67	104	979	18
Adj No. of Lanes	1	1	1	2	1	0	1	3	1	1	3	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	494	417	215	258	190	96	2250	686	127	2340	721
Arrive On Green	0.07	0.27	0.27	0.06	0.26	0.26	0.05	0.45	0.45	0.07	0.46	0.46
Sat Flow, veh/h	1757	1845	1559	3408	988	727	1757	5036	1535	1757	5036	1553
Grp Volume(v), veh/h	99	141	31	155	0	415	56	1128	67	104	979	18
Grp Sat Flow(s),veh/h/ln	1757	1845	1559	1704	0	1715	1757	1679	1535	1757	1679	1553
Q Serve(g_s), s	7.0	7.6	1.9	5.6	0.0	29.7	3.9	20.1	3.2	7.4	16.3	0.8
Cycle Q Clear(g_c), s	7.0	7.6	1.9	5.6	0.0	29.7	3.9	20.1	3.2	7.4	16.3	0.8
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	123	494	417	215	0	448	96	2250	686	127	2340	721
V/C Ratio(X)	0.81	0.29	0.07	0.72	0.00	0.93	0.58	0.50	0.10	0.82	0.42	0.02
Avail Cap(c_a), veh/h	216	621	525	311	0	523	146	2250	686	146	2340	721
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.00	0.73	0.79	0.79	0.79	0.92	0.92	0.92
Uniform Delay (d), s/veh	57.8	36.6	34.5	57.9	0.0	45.4	58.2	24.9	20.2	57.6	22.4	18.3
Incr Delay (d2), s/veh	9.0	0.2	0.1	2.5	0.0	16.2	3.3	0.6	0.2	23.3	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.9	0.8	2.7	0.0	16.1	2.0	9.4	1.4	4.4	7.6	0.3
LnGrp Delay(d),s/veh	66.7	36.8	34.5	60.4	0.0	61.6	61.5	25.5	20.4	80.9	22.9	18.3
LnGrp LOS	E	D	C	E		E	E	C	C	F	C	B
Approach Vol, veh/h		271			570			1251			1101	
Approach Delay, s/veh		47.5			61.3			26.8			28.3	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	38.3	11.4	63.8	13.3	37.5	13.6	61.6
Change Period (Y+Rc), s	4.5	4.6	4.5	5.3	4.5	4.6	4.5	* 5.3
Max Green Setting (Gmax), s	11.5	42.4	10.5	42.7	15.5	38.4	10.5	* 43
Max Q Clear Time (g_c+I1), s	7.6	9.6	5.9	18.3	9.0	31.7	9.4	22.1
Green Ext Time (p_c), s	0.1	0.7	0.0	10.0	0.1	1.2	0.0	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	230	10	93	353	58	20	50	113	33	40	30
Future Volume (veh/h)	30	230	10	93	353	58	20	50	113	33	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	48	371	14	150	569	46	32	81	117	53	65	29
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	65	588	22	193	748	635	49	131	189	70	251	112
Arrive On Green	0.04	0.33	0.33	0.11	0.41	0.41	0.03	0.20	0.20	0.04	0.21	0.21
Sat Flow, veh/h	1757	1766	67	1757	1845	1566	1757	669	966	1757	1210	540
Grp Volume(v), veh/h	48	0	385	150	569	46	32	0	198	53	0	94
Grp Sat Flow(s),veh/h/ln	1757	0	1832	1757	1845	1566	1757	0	1635	1757	0	1749
Q Serve(g_s), s	1.6	0.0	10.2	4.8	15.2	1.0	1.0	0.0	6.4	1.7	0.0	2.6
Cycle Q Clear(g_c), s	1.6	0.0	10.2	4.8	15.2	1.0	1.0	0.0	6.4	1.7	0.0	2.6
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.59	1.00		0.31
Lane Grp Cap(c), veh/h	65	0	610	193	748	635	49	0	320	70	0	363
V/C Ratio(X)	0.73	0.00	0.63	0.78	0.76	0.07	0.65	0.00	0.62	0.76	0.00	0.26
Avail Cap(c_a), veh/h	321	0	1499	734	1509	1281	229	0	939	229	0	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	16.2	24.9	14.7	10.5	27.7	0.0	21.1	27.3	0.0	19.1
Incr Delay (d2), s/veh	5.8	0.0	1.5	2.6	2.3	0.1	5.4	0.0	0.7	6.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	5.4	2.4	8.2	0.5	0.6	0.0	2.9	0.9	0.0	1.3
LnGrp Delay(d),s/veh	33.1	0.0	17.7	27.4	17.0	10.5	33.0	0.0	21.9	33.5	0.0	19.2
LnGrp LOS	C		B	C	B	B	C		C	C		B
Approach Vol, veh/h		433			765			230			147	
Approach Delay, s/veh		19.4			18.7			23.4			24.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	24.1	6.1	16.4	6.6	28.3	6.8	15.7
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	24.0	47.0	7.5	24.0	10.5	47.0	7.5	33.0
Max Q Clear Time (g_c+I1), s	16.8	12.2	3.0	4.6	3.6	17.2	3.7	8.4
Green Ext Time (p_c), s	0.2	3.6	0.0	0.3	0.0	6.1	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	336	26	86	344	10	104	42	107	10	40	30
Future Volume (veh/h)	82	336	26	86	344	10	104	42	107	10	40	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	126	517	14	132	529	4	160	65	137	15	62	18
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	163	690	574	171	698	589	411	126	265	301	327	95
Arrive On Green	0.09	0.37	0.37	0.10	0.38	0.38	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1757	1845	1535	1757	1845	1558	1291	527	1111	1158	1372	398
Grp Volume(v), veh/h	126	517	14	132	529	4	160	0	202	15	0	80
Grp Sat Flow(s),veh/h/ln	1757	1845	1535	1757	1845	1558	1291	0	1638	1158	0	1770
Q Serve(g_s), s	3.4	11.8	0.3	3.5	12.1	0.1	5.4	0.0	5.2	0.6	0.0	1.7
Cycle Q Clear(g_c), s	3.4	11.8	0.3	3.5	12.1	0.1	7.2	0.0	5.2	5.7	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.68	1.00		0.22
Lane Grp Cap(c), veh/h	163	690	574	171	698	589	411	0	391	301	0	422
V/C Ratio(X)	0.77	0.75	0.02	0.77	0.76	0.01	0.39	0.00	0.52	0.05	0.00	0.19
Avail Cap(c_a), veh/h	728	1146	954	728	1146	968	638	0	678	505	0	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	13.1	9.5	21.3	13.1	9.4	17.5	0.0	16.0	18.4	0.0	14.7
Incr Delay (d2), s/veh	2.9	2.4	0.0	2.8	2.4	0.0	0.9	0.0	1.5	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.3	0.1	1.9	6.5	0.0	2.0	0.0	2.5	0.2	0.0	0.9
LnGrp Delay(d),s/veh	24.3	15.5	9.6	24.0	15.5	9.4	18.4	0.0	17.5	18.5	0.0	15.0
LnGrp LOS	C	B	A	C	B	A	B		B	B		B
Approach Vol, veh/h		657			665			362			95	
Approach Delay, s/veh		17.1			17.2			17.9			15.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	23.1		16.0	9.0	23.3		16.0
Change Period (Y+Rc), s	4.5	5.0		4.5	4.5	5.0		4.5
Max Green Setting (Gmax), s	20.6	30.0		20.0	20.0	30.0		20.0
Max Q Clear Time (g_c+I1), s	5.5	13.8		7.7	5.4	14.1		9.2
Green Ext Time (p_c), s	0.1	4.1		0.4	0.1	4.1		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	392	47	60	397	20	38	52	60	10	30	35
Future Volume (veh/h)	64	392	47	60	397	20	38	52	60	10	30	35
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	97	594	32	91	602	13	58	79	55	15	45	14
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	159	780	663	117	737	622	74	177	123	26	198	62
Arrive On Green	0.09	0.42	0.42	0.07	0.40	0.40	0.04	0.18	0.18	0.01	0.15	0.15
Sat Flow, veh/h	1757	1845	1568	1757	1845	1558	1757	1009	702	1757	1340	417
Grp Volume(v), veh/h	97	594	32	91	602	13	58	0	134	15	0	59
Grp Sat Flow(s),veh/h/ln	1757	1845	1568	1757	1845	1558	1757	0	1711	1757	0	1757
Q Serve(g_s), s	3.0	15.4	0.7	2.9	16.4	0.3	1.8	0.0	3.9	0.5	0.0	1.7
Cycle Q Clear(g_c), s	3.0	15.4	0.7	2.9	16.4	0.3	1.8	0.0	3.9	0.5	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.24
Lane Grp Cap(c), veh/h	159	780	663	117	737	622	74	0	300	26	0	260
V/C Ratio(X)	0.61	0.76	0.05	0.78	0.82	0.02	0.78	0.00	0.45	0.57	0.00	0.23
Avail Cap(c_a), veh/h	625	985	837	625	985	832	625	0	731	625	0	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	13.8	9.6	25.8	15.1	10.2	26.6	0.0	20.7	27.5	0.0	21.1
Incr Delay (d2), s/veh	1.4	3.2	0.0	4.1	4.8	0.0	6.4	0.0	1.0	7.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.5	0.3	1.5	9.2	0.1	1.0	0.0	1.9	0.3	0.0	0.8
LnGrp Delay(d),s/veh	26.0	17.0	9.6	29.9	19.8	10.2	33.1	0.0	21.8	34.7	0.0	21.6
LnGrp LOS	C	B	A	C	B	B	C		C	C		C
Approach Vol, veh/h		723			706			192			74	
Approach Delay, s/veh		17.9			21.0			25.2			24.2	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	28.8	6.4	12.8	9.6	27.4	4.8	14.3
Change Period (Y+Rc), s	4.5	5.0	4.0	4.5	4.5	5.0	4.0	4.5
Max Green Setting (Gmax), s	20.6	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	4.9	17.4	3.8	3.7	5.0	18.4	2.5	5.9
Green Ext Time (p_c), s	0.1	4.3	0.0	0.2	0.1	4.1	0.0	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	1410	490	789	1230	51	1050	746	987	65	810	230
Future Volume (veh/h)	250	1410	490	789	1230	51	1050	746	987	65	810	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	347	1958	655	1096	1708	70	1458	1036	1057	90	1125	77
Adj No. of Lanes	2	4	1	3	3	0	3	4	1	2	4	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	393	1743	711	887	1679	69	887	2036	497	321	1496	648
Arrive On Green	0.12	0.27	0.27	0.18	0.34	0.34	0.18	0.32	0.32	0.09	0.24	0.24
Sat Flow, veh/h	3408	6346	1568	4954	4958	203	4954	6346	1548	3408	6346	2749
Grp Volume(v), veh/h	347	1958	655	1096	1156	622	1458	1036	1057	90	1125	77
Grp Sat Flow(s),veh/h/ln	1704	1586	1568	1651	1679	1804	1651	1586	1548	1704	1586	1375
Q Serve(g_s), s	16.8	46.0	46.0	30.0	56.7	56.7	30.0	22.2	53.7	4.1	27.6	3.7
Cycle Q Clear(g_c), s	16.8	46.0	46.0	30.0	56.7	56.7	30.0	22.2	53.7	4.1	27.6	3.7
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	1743	711	887	1137	611	887	2036	497	321	1496	648
V/C Ratio(X)	0.88	1.12	0.92	1.24	1.02	1.02	1.64	0.51	2.13	0.28	0.75	0.12
Avail Cap(c_a), veh/h	610	1743	711	887	1137	611	887	2036	497	610	1743	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.0	60.8	42.9	68.8	55.4	55.4	68.8	46.2	56.9	70.6	59.4	50.3
Incr Delay (d2), s/veh	6.4	63.8	17.3	115.6	31.1	41.1	294.5	0.3	514.4	0.2	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	27.8	31.7	23.1	31.1	35.1	37.8	9.8	94.0	1.9	12.3	1.4
LnGrp Delay(d),s/veh	79.4	124.5	60.2	184.3	86.5	96.5	363.3	46.5	571.2	70.8	61.3	50.4
LnGrp LOS	E	F	E	F	F	F	F	D	F	E	E	D
Approach Vol, veh/h		2960			2874			3551			1292	
Approach Delay, s/veh		105.0			125.9			332.7			61.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	52.0	35.0	45.5	24.3	62.7	20.8	59.7
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	30.0	46.0	30.0	46.0	30.0	46.0
Max Q Clear Time (g_c+I1), s	32.0	48.0	32.0	29.6	18.8	58.7	6.1	55.7
Green Ext Time (p_c), s	0.0	0.0	0.0	9.4	0.5	0.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	181.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	2268	50	10	1918	40	60	10	10	60	10	92
Future Volume (veh/h)	134	2268	50	10	1918	40	60	10	10	60	10	92
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	189	3194	46	14	2701	32	85	14	1	85	14	13
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	208	3640	1133	22	3109	947	108	42	3	107	21	20
Arrive On Green	0.12	0.72	0.72	0.01	0.62	0.62	0.06	0.02	0.02	0.06	0.02	0.02
Sat Flow, veh/h	1757	5036	1568	1757	5036	1533	1757	1700	121	1757	882	819
Grp Volume(v), veh/h	189	3194	46	14	2701	32	85	0	15	85	0	27
Grp Sat Flow(s),veh/h/ln	1757	1679	1568	1757	1679	1533	1757	0	1821	1757	0	1700
Q Serve(g_s), s	11.2	50.8	0.9	0.8	46.8	0.9	5.0	0.0	0.9	5.0	0.0	1.7
Cycle Q Clear(g_c), s	11.2	50.8	0.9	0.8	46.8	0.9	5.0	0.0	0.9	5.0	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.48
Lane Grp Cap(c), veh/h	208	3640	1133	22	3109	947	108	0	45	107	0	41
V/C Ratio(X)	0.91	0.88	0.04	0.62	0.87	0.03	0.79	0.00	0.34	0.79	0.00	0.66
Avail Cap(c_a), veh/h	208	3640	1133	66	3147	958	228	0	706	108	0	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	11.1	4.2	52.0	16.7	7.9	48.9	0.0	50.7	49.0	0.0	51.2
Incr Delay (d2), s/veh	37.9	2.8	0.0	10.1	2.9	0.0	4.7	0.0	1.6	29.4	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	24.0	0.4	0.5	22.4	0.4	2.6	0.0	0.5	3.3	0.0	0.9
LnGrp Delay(d),s/veh	84.0	13.9	4.2	62.1	19.6	7.9	53.6	0.0	52.4	78.4	0.0	57.7
LnGrp LOS	F	B	A	E	B	A	D		D	E		E
Approach Vol, veh/h		3429			2747			100			112	
Approach Delay, s/veh		17.6			19.7			53.4			73.4	
Approach LOS		B			B			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	81.8	11.0	7.2	17.0	70.6	11.0	7.2
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	1.3	74.6	13.7	33.8	12.5	66.1	6.5	41.0
Max Q Clear Time (g_c+I1), s	2.8	52.8	7.0	3.7	13.2	48.8	7.0	2.9
Green Ext Time (p_c), s	0.0	21.4	0.0	0.1	0.0	16.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2298	60	274	1858	0	50	30	220	0	0	0
Future Volume (veh/h)	20	2298	60	274	1858	0	50	30	220	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	29	3283	50	391	2654	0	71	43	188	0	0	-13
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	45	2753	853	296	3471	1081	127	308	259	1	0	387
Arrive On Green	0.03	0.55	0.55	0.17	0.69	0.00	0.04	0.17	0.17	0.00	0.00	0.00
Sat Flow, veh/h	1757	5036	1561	1757	5036	1568	3408	1845	1554	1757	1845	0
Grp Volume(v), veh/h	29	3283	50	391	2654	0	71	43	188	0	-13	-13
Grp Sat Flow(s),veh/h/ln	1757	1679	1561	1757	1679	1568	1704	1845	1554	1757	1845	1568
Q Serve(g_s), s	2.0	66.6	1.8	20.5	42.2	0.0	2.5	2.4	14.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	66.6	1.8	20.5	42.2	0.0	2.5	2.4	14.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	45	2753	853	296	3471	1081	127	308	259	1	0	0
V/C Ratio(X)	0.64	1.19	0.06	1.32	0.76	0.00	0.56	0.14	0.72	0.00	0.00	0.00
Avail Cap(c_a), veh/h	72	2753	853	296	3471	1081	196	590	497	72	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	58.8	27.6	12.9	50.7	12.4	0.0	57.7	43.3	48.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	5.6	90.6	0.0	167.0	1.1	0.0	1.4	0.1	1.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	53.7	0.8	23.6	19.8	0.0	1.2	1.2	6.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	64.4	118.2	13.0	217.6	13.6	0.0	59.1	43.4	49.5	0.0	0.0	0.0
LnGrp LOS	E	F	B	F	B		E	D	D			
Approach Vol, veh/h		3362			3045			302			-26	
Approach Delay, s/veh		116.2			39.8			50.9			0.0	
Approach LOS		F			D			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	71.9	9.0	15.9	7.6	89.3	0.0	24.9
Change Period (Y+Rc), s	4.5	5.3	4.5	4.6	4.5	5.3	4.5	4.6
Max Green Setting (Gmax), s	20.5	66.6	7.0	37.0	5.0	82.1	5.0	39.0
Max Q Clear Time (g_c+I1), s	22.5	68.6	4.5	0.0	4.0	44.2	0.0	16.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	34.2	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	78.9
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	1987	40	10	1740	21	70	0	10	33	10	117
Future Volume (veh/h)	376	1987	40	10	1740	21	70	0	10	33	10	117
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	545	2880	38	14	2522	16	101	0	2	48	14	25
Adj No. of Lanes	2	3	1	2	3	1	2	0	2	1	1	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	535	3306	1029	106	2673	812	172	0	350	71	61	110
Arrive On Green	0.16	0.66	0.66	0.03	0.53	0.53	0.05	0.00	0.11	0.04	0.10	0.10
Sat Flow, veh/h	3408	5036	1567	3408	5036	1530	3514	0	3111	1757	593	1058
Grp Volume(v), veh/h	545	2880	38	14	2522	16	101	0	2	48	0	39
Grp Sat Flow(s),veh/h/ln	1704	1679	1567	1704	1679	1530	1757	0	1555	1757	0	1651
Q Serve(g_s), s	18.5	54.1	1.0	0.5	55.5	0.6	3.3	0.0	0.1	3.2	0.0	2.6
Cycle Q Clear(g_c), s	18.5	54.1	1.0	0.5	55.5	0.6	3.3	0.0	0.1	3.2	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	535	3306	1029	106	2673	812	172	0	350	71	0	171
V/C Ratio(X)	1.02	0.87	0.04	0.13	0.94	0.02	0.59	0.00	0.01	0.68	0.00	0.23
Avail Cap(c_a), veh/h	535	3306	1029	289	2679	814	179	0	1161	89	0	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.7	16.2	7.1	55.5	26.0	13.1	54.9	0.0	46.4	55.8	0.0	48.5
Incr Delay (d2), s/veh	43.7	2.9	0.0	0.2	7.9	0.0	2.9	0.0	0.0	7.5	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	25.7	0.4	0.2	27.4	0.2	1.7	0.0	0.0	1.7	0.0	1.2
LnGrp Delay(d),s/veh	93.4	19.1	7.1	55.7	33.9	13.1	57.8	0.0	46.5	63.3	0.0	49.4
LnGrp LOS	F	B	A	E	C	B	E		D	E		D
Approach Vol, veh/h		3463			2552			103			87	
Approach Delay, s/veh		30.7			33.9			57.5			57.1	
Approach LOS		C			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	82.7	10.3	16.7	23.0	67.8	9.3	17.8
Change Period (Y+Rc), s	4.5	5.3	4.5	4.5	4.5	5.3	4.5	4.5
Max Green Setting (Gmax), s	10.0	71.2	6.0	44.0	18.5	62.7	6.0	44.0
Max Q Clear Time (g_c+I1), s	2.5	56.1	5.3	4.6	20.5	57.5	5.2	2.1
Green Ext Time (p_c), s	0.0	14.7	0.0	0.3	0.0	5.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	1610	408	810	1030	590	119	493	360	570	578	142
Future Volume (veh/h)	262	1610	408	810	1030	590	119	493	360	570	578	142
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	374	2300	383	1157	1471	603	170	704	173	814	826	102
Adj No. of Lanes	2	3	2	3	3	1	3	3	2	3	3	1
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	280	1712	938	847	2115	658	339	843	462	889	1403	433
Arrive On Green	0.08	0.34	0.34	0.17	0.42	0.42	0.07	0.17	0.17	0.18	0.28	0.28
Sat Flow, veh/h	3408	5036	2760	4954	5036	1568	4954	5036	2760	4954	5036	1556
Grp Volume(v), veh/h	374	2300	383	1157	1471	603	170	704	173	814	826	102
Grp Sat Flow(s),veh/h/ln	1704	1679	1380	1651	1679	1568	1651	1679	1380	1651	1679	1556
Q Serve(g_s), s	12.0	49.7	15.6	25.0	35.0	53.0	4.8	19.8	8.1	23.6	20.7	7.4
Cycle Q Clear(g_c), s	12.0	49.7	15.6	25.0	35.0	53.0	4.8	19.8	8.1	23.6	20.7	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	280	1712	938	847	2115	658	339	843	462	889	1403	433
V/C Ratio(X)	1.34	1.34	0.41	1.37	0.70	0.92	0.50	0.83	0.37	0.92	0.59	0.24
Avail Cap(c_a), veh/h	280	1712	938	847	2115	658	339	920	504	959	1550	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.1	48.3	37.0	60.6	34.7	40.0	65.7	58.9	54.1	58.9	45.5	40.7
Incr Delay (d2), s/veh	173.9	158.6	0.4	172.2	0.9	17.3	0.4	6.7	0.7	12.1	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	48.1	6.0	24.9	16.4	26.1	2.2	9.7	3.2	11.8	9.7	3.2
LnGrp Delay(d),s/veh	241.0	206.9	37.4	232.8	35.6	57.2	66.2	65.6	54.8	71.0	46.2	41.1
LnGrp LOS	F	F	D	F	D	E	E	E	D	E	D	D
Approach Vol, veh/h		3057			3231			1047			1742	
Approach Delay, s/veh		189.8			110.3			63.9			57.5	
Approach LOS		F			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	55.5	15.3	46.4	17.3	67.2	31.5	30.2
Change Period (Y+Rc), s	4.0	* 5.8	5.3	5.7	5.3	5.8	5.3	5.7
Max Green Setting (Gmax), s	25.0	* 50	10.0	45.0	12.0	60.9	28.3	26.7
Max Q Clear Time (g_c+I1), s	27.0	51.7	6.8	22.7	14.0	55.0	25.6	21.8
Green Ext Time (p_c), s	0.0	0.0	0.1	8.0	0.0	3.9	0.6	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	121.6
HCM 2010 LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	0	170	0	0	0	270	906	0	0	526	40
Future Volume (veh/h)	100	0	170	0	0	0	270	906	0	0	526	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	0	0	1845	1845
Adj Flow Rate, veh/h	167	0	38	0	0	0	450	1510	0	0	877	20
Adj No. of Lanes	2	0	2	0	1	0	1	3	0	0	2	1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	342	0	305	0	3	0	508	3686	0	0	1283	565
Arrive On Green	0.10	0.00	0.10	0.00	0.00	0.00	0.29	0.73	0.00	0.00	0.37	0.37
Sat Flow, veh/h	3514	0	3136	0	1845	0	1757	5202	0	0	3597	1543
Grp Volume(v), veh/h	167	0	38	0	0	0	450	1510	0	0	877	20
Grp Sat Flow(s),veh/h/ln	1757	0	1568	0	1845	0	1757	1679	0	0	1752	1543
Q Serve(g_s), s	2.6	0.0	0.6	0.0	0.0	0.0	14.3	6.7	0.0	0.0	12.4	0.5
Cycle Q Clear(g_c), s	2.6	0.0	0.6	0.0	0.0	0.0	14.3	6.7	0.0	0.0	12.4	0.5
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	342	0	305	0	3	0	508	3686	0	0	1283	565
V/C Ratio(X)	0.49	0.00	0.12	0.00	0.00	0.00	0.89	0.41	0.00	0.00	0.68	0.04
Avail Cap(c_a), veh/h	1860	0	1660	0	976	0	1005	5846	0	0	1795	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	24.2	0.0	0.0	0.0	19.9	3.0	0.0	0.0	15.7	11.9
Incr Delay (d2), s/veh	1.5	0.0	0.3	0.0	0.0	0.0	2.1	0.1	0.0	0.0	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.3	0.0	0.0	0.0	7.2	3.1	0.0	0.0	6.1	0.2
LnGrp Delay(d),s/veh	26.6	0.0	24.4	0.0	0.0	0.0	22.0	3.1	0.0	0.0	16.6	12.0
LnGrp LOS	C		C				C	A			B	B
Approach Vol, veh/h		205			0			1960			897	
Approach Delay, s/veh		26.2			0.0			7.5			16.5	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		10.7	21.4	26.4		0.0		47.9
Change Period (Y+Rc), s		5.0	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s		31.0	33.5	30.0		31.0		68.0
Max Q Clear Time (g_c+I1), s		4.6	16.3	14.4		0.0		8.7
Green Ext Time (p_c), s		1.1	0.6	6.8		0.0		23.3

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	140	110	90	200	108	50	914	90	53	609	130
Future Volume (veh/h)	200	140	110	90	200	108	50	914	90	53	609	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	282	197	48	127	282	139	70	1287	51	75	858	77
Adj No. of Lanes	2	1	1	2	1	0	2	3	1	1	3	1
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	342	584	489	181	314	155	128	2091	650	95	2175	675
Arrive On Green	0.10	0.32	0.32	0.05	0.27	0.27	0.04	0.42	0.42	0.05	0.43	0.43
Sat Flow, veh/h	3408	1845	1545	3408	1167	575	3408	5036	1566	1757	5036	1563
Grp Volume(v), veh/h	282	197	48	127	0	421	70	1287	51	75	858	77
Grp Sat Flow(s),veh/h/ln	1704	1845	1545	1704	0	1742	1704	1679	1566	1757	1679	1563
Q Serve(g_s), s	9.7	9.8	2.6	4.4	0.0	27.9	2.4	24.1	2.4	5.1	14.0	3.5
Cycle Q Clear(g_c), s	9.7	9.8	2.6	4.4	0.0	27.9	2.4	24.1	2.4	5.1	14.0	3.5
Prop In Lane	1.00		1.00	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	584	489	181	0	469	128	2091	650	95	2175	675
V/C Ratio(X)	0.83	0.34	0.10	0.70	0.00	0.90	0.55	0.62	0.08	0.79	0.39	0.11
Avail Cap(c_a), veh/h	454	693	581	253	0	552	165	2091	650	139	2175	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.00	0.89	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	31.4	28.9	55.9	0.0	42.2	56.7	27.6	21.2	56.1	23.3	20.4
Incr Delay (d2), s/veh	8.2	0.6	0.1	3.4	0.0	15.6	2.2	1.1	0.2	13.9	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.1	1.1	2.2	0.0	15.5	1.2	11.3	1.1	2.8	6.6	1.6
LnGrp Delay(d),s/veh	61.1	31.9	29.1	59.3	0.0	57.8	58.9	28.7	21.4	70.0	23.9	20.7
LnGrp LOS	E	C	C	E		E	E	C	C	E	C	C
Approach Vol, veh/h		527			548			1408			1010	
Approach Delay, s/veh		47.3			58.2			29.9			27.1	
Approach LOS		D			E			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	43.0	9.0	57.1	16.5	37.3	11.0	55.1
Change Period (Y+Rc), s	4.5	5.0	4.5	5.3	4.5	5.0	4.5	5.3
Max Green Setting (Gmax), s	8.5	45.1	5.8	40.9	16.0	38.0	9.5	37.2
Max Q Clear Time (g_c+I1), s	6.4	11.8	4.4	16.0	11.7	29.9	7.1	26.1
Green Ext Time (p_c), s	0.1	2.2	0.0	8.6	0.3	2.3	0.0	7.5

Intersection Summary	
HCM 2010 Ctrl Delay	36.1
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	180	23	10	190	10	38	30	20	20	40	90
Future Volume (veh/h)	60	180	23	10	190	10	38	30	20	20	40	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1845	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	105	316	38	18	333	7	67	53	12	35	70	32
Adj No. of Lanes	1	1	0	1	1	1	1	1	0	1	1	1
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	134	550	66	32	522	442	93	186	42	57	199	169
Arrive On Green	0.08	0.34	0.34	0.02	0.28	0.28	0.05	0.13	0.13	0.03	0.11	0.11
Sat Flow, veh/h	1757	1612	194	1757	1845	1560	1757	1446	327	1757	1845	1568
Grp Volume(v), veh/h	105	0	354	18	333	7	67	0	65	35	70	32
Grp Sat Flow(s),veh/h/ln	1757	0	1806	1757	1845	1560	1757	0	1773	1757	1845	1568
Q Serve(g_s), s	2.3	0.0	6.2	0.4	6.1	0.1	1.4	0.0	1.3	0.8	1.4	0.7
Cycle Q Clear(g_c), s	2.3	0.0	6.2	0.4	6.1	0.1	1.4	0.0	1.3	0.8	1.4	0.7
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	134	0	616	32	522	442	93	0	228	57	199	169
V/C Ratio(X)	0.78	0.00	0.57	0.56	0.64	0.02	0.72	0.00	0.29	0.61	0.35	0.19
Avail Cap(c_a), veh/h	911	0	1404	911	1434	1213	911	0	919	911	956	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	10.4	18.8	12.1	10.0	18.0	0.0	15.2	18.4	16.0	15.7
Incr Delay (d2), s/veh	3.7	0.0	1.2	5.7	1.8	0.0	3.8	0.0	1.0	3.9	1.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.3	0.2	3.3	0.1	0.8	0.0	0.7	0.4	0.8	0.3
LnGrp Delay(d),s/veh	21.2	0.0	11.6	24.5	13.9	10.0	21.8	0.0	16.2	22.4	17.5	16.4
LnGrp LOS	C		B	C	B	A	C		B	C	B	B
Approach Vol, veh/h		459			358			132			137	
Approach Delay, s/veh		13.8			14.4			19.0			18.5	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	18.2	6.5	8.7	7.4	15.9	5.8	9.5
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	20.0	20.0	30.0	20.0	20.0
Max Q Clear Time (g_c+I1), s	2.4	8.2	3.4	3.4	4.3	8.1	2.8	3.3
Green Ext Time (p_c), s	0.0	2.8	0.1	0.5	0.1	2.6	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	140	110	80	160	40	30	104	100	50	60	40
Future Volume (veh/h)	40	140	110	80	160	40	30	104	100	50	60	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.96	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	74	259	47	148	296	20	56	193	55	93	111	39
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	94	741	329	190	931	415	72	406	116	120	406	143
Arrive On Green	0.05	0.21	0.21	0.11	0.27	0.27	0.04	0.30	0.30	0.07	0.32	0.32
Sat Flow, veh/h	1757	3505	1557	1757	3505	1562	1757	1369	390	1757	1253	440
Grp Volume(v), veh/h	74	259	47	148	296	20	56	0	248	93	0	150
Grp Sat Flow(s),veh/h/ln	1757	1752	1557	1757	1752	1562	1757	0	1759	1757	0	1693
Q Serve(g_s), s	2.4	3.7	1.4	4.8	4.0	0.6	1.9	0.0	6.8	3.1	0.0	3.9
Cycle Q Clear(g_c), s	2.4	3.7	1.4	4.8	4.0	0.6	1.9	0.0	6.8	3.1	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		0.26
Lane Grp Cap(c), veh/h	94	741	329	190	931	415	72	0	522	120	0	549
V/C Ratio(X)	0.78	0.35	0.14	0.78	0.32	0.05	0.78	0.00	0.48	0.77	0.00	0.27
Avail Cap(c_a), veh/h	599	1792	796	599	1792	799	599	0	720	599	0	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	19.7	18.8	25.5	17.3	16.0	27.9	0.0	16.9	26.9	0.0	14.7
Incr Delay (d2), s/veh	5.3	0.4	0.3	2.6	0.3	0.1	6.7	0.0	1.0	4.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.8	0.6	2.5	1.9	0.2	1.0	0.0	3.4	1.6	0.0	1.8
LnGrp Delay(d),s/veh	32.7	20.1	19.1	28.1	17.6	16.1	34.6	0.0	17.8	30.8	0.0	15.1
LnGrp LOS	C	C	B	C	B	B	C		B	C		B
Approach Vol, veh/h		380			464			304			243	
Approach Delay, s/veh		22.4			20.9			20.9			21.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	17.4	6.9	23.5	7.7	20.6	8.5	21.9
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	20.0	30.0	20.0	24.0	20.0	30.0	20.0	24.0
Max Q Clear Time (g_c+I1), s	6.8	5.7	3.9	5.9	4.4	6.0	5.1	8.8
Green Ext Time (p_c), s	0.1	2.4	0.0	1.1	0.1	2.6	0.1	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	84	258	110	76	40	284	1389	122	40	732	147
Future Volume (veh/h)	220	84	258	110	76	40	284	1389	122	40	732	147
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	324	124	73	162	112	10	418	2043	130	59	1076	131
Adj No. of Lanes	2	1	2	2	1	1	2	3	1	1	3	1
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	374	276	404	336	255	212	491	2463	765	141	2118	656
Arrive On Green	0.11	0.15	0.15	0.10	0.14	0.14	0.14	0.49	0.49	0.08	0.42	0.42
Sat Flow, veh/h	3408	1845	2701	3408	1845	1530	3408	5036	1563	1757	5036	1561
Grp Volume(v), veh/h	324	124	73	162	112	10	418	2043	130	59	1076	131
Grp Sat Flow(s),veh/h/ln	1704	1845	1350	1704	1845	1530	1704	1679	1563	1757	1679	1561
Q Serve(g_s), s	9.4	6.1	2.4	4.5	5.6	0.6	12.0	35.0	4.6	3.2	15.8	5.3
Cycle Q Clear(g_c), s	9.4	6.1	2.4	4.5	5.6	0.6	12.0	35.0	4.6	3.2	15.8	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	276	404	336	255	212	491	2463	765	141	2118	656
V/C Ratio(X)	0.87	0.45	0.18	0.48	0.44	0.05	0.85	0.83	0.17	0.42	0.51	0.20
Avail Cap(c_a), veh/h	374	846	1238	340	827	686	673	2545	790	175	2118	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	38.9	37.3	42.8	39.6	37.5	41.9	22.0	14.3	43.9	21.4	18.4
Incr Delay (d2), s/veh	18.2	1.6	0.3	0.4	1.7	0.1	5.9	2.5	0.1	0.7	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	3.3	0.9	2.1	3.0	0.2	6.0	16.6	2.0	1.6	7.3	2.3
LnGrp Delay(d),s/veh	62.2	40.5	37.6	43.2	41.3	37.6	47.8	24.5	14.4	44.6	21.7	18.6
LnGrp LOS	E	D	D	D	D	D	D	C	B	D	C	B
Approach Vol, veh/h		521			284			2591			1266	
Approach Delay, s/veh		53.6			42.3			27.8			22.5	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	20.0	19.0	47.5	15.0	18.9	12.1	54.4
Change Period (Y+Rc), s	4.0	5.0	4.5	5.3	4.0	5.0	4.0	5.3
Max Green Setting (Gmax), s	10.0	46.0	19.8	40.4	11.0	45.0	10.0	50.7
Max Q Clear Time (g_c+I1), s	6.5	8.1	14.0	17.8	11.4	7.6	5.2	37.0
Green Ext Time (p_c), s	0.1	1.5	0.4	10.7	0.0	0.9	0.0	12.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	318	18	21	447	10	27	10	30	10	10	20
Future Volume (veh/h)	30	318	18	21	447	10	27	10	30	10	10	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	45	482	21	32	677	7	41	15	31	15	15	3
Adj No. of Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	840	693	51	824	696	62	53	110	27	119	24
Arrive On Green	0.04	0.46	0.46	0.03	0.45	0.45	0.04	0.10	0.10	0.02	0.08	0.08
Sat Flow, veh/h	1757	1845	1522	1757	1845	1559	1757	530	1095	1757	1488	298
Grp Volume(v), veh/h	45	482	21	32	677	7	41	0	46	15	0	18
Grp Sat Flow(s),veh/h/ln	1757	1845	1522	1757	1845	1559	1757	0	1625	1757	0	1786
Q Serve(g_s), s	1.2	8.9	0.4	0.8	14.8	0.1	1.1	0.0	1.2	0.4	0.0	0.4
Cycle Q Clear(g_c), s	1.2	8.9	0.4	0.8	14.8	0.1	1.1	0.0	1.2	0.4	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		0.17
Lane Grp Cap(c), veh/h	67	840	693	51	824	696	62	0	163	27	0	143
V/C Ratio(X)	0.67	0.57	0.03	0.62	0.82	0.01	0.66	0.00	0.28	0.56	0.00	0.13
Avail Cap(c_a), veh/h	152	1018	840	152	1018	860	152	0	985	152	0	1082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	9.3	7.0	22.2	11.2	7.1	22.0	0.0	19.3	22.6	0.0	19.8
Incr Delay (d2), s/veh	4.4	0.9	0.0	4.6	5.1	0.0	4.4	0.0	0.3	6.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.6	0.2	0.5	8.5	0.1	0.6	0.0	0.6	0.2	0.0	0.2
LnGrp Delay(d),s/veh	26.3	10.2	7.0	26.8	16.3	7.1	26.4	0.0	19.6	29.4	0.0	19.9
LnGrp LOS	C	B	A	C	B	A	C		B	C		B
Approach Vol, veh/h		548			716			87			33	
Approach Delay, s/veh		11.4			16.7			22.8			24.2	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	26.0	6.1	8.2	6.3	25.6	5.2	9.1
Change Period (Y+Rc), s	4.5	5.0	4.5	4.5	4.5	5.0	4.5	4.5
Max Green Setting (Gmax), s	4.0	25.5	4.0	28.0	4.0	25.5	4.0	28.0
Max Q Clear Time (g_c+I1), s	2.8	10.9	3.1	2.4	3.2	16.8	2.4	3.2
Green Ext Time (p_c), s	0.0	3.6	0.0	0.0	0.0	3.8	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	20	63	51	10	63
Future Vol, veh/h	90	20	63	51	10	63
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	138	31	97	78	15	97
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9	8.3	8.4
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	82%	14%
Vol Thru, %	55%	0%	86%
Vol Right, %	45%	18%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	114	110	73
LT Vol	0	90	10
Through Vol	63	0	63
RT Vol	51	20	0
Lane Flow Rate	175	169	112
Geometry Grp	1	1	1
Degree of Util (X)	0.206	0.218	0.143
Departure Headway (Hd)	4.225	4.644	4.578
Convergence, Y/N	Yes	Yes	Yes
Cap	851	773	784
Service Time	2.244	2.668	2.599
HCM Lane V/C Ratio	0.206	0.219	0.143
HCM Control Delay	8.3	9	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0.8	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1410	490	789	1230	51	1050	746	987	65	810	230
Future Volume (vph)	250	1410	490	789	1230	51	1050	746	987	65	810	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.86	1.00	0.94	0.91		0.94	0.86	1.00	0.97	0.86	0.88
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	6346	1568	4942	5002		4942	6346	1548	3400	6346	2718
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	6346	1568	4942	5002		4942	6346	1548	3400	6346	2718
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Adj. Flow (vph)	347	1958	681	1096	1708	71	1458	1036	1371	90	1125	319
RTOR Reduction (vph)	0	0	26	0	2	0	0	0	314	0	0	241
Lane Group Flow (vph)	347	1958	655	1096	1777	0	1458	1036	1057	90	1125	78
Confl. Peds. (#/hr)						7						3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pt+ov	Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	2 3	1	6		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	21.7	46.1	82.1	30.0	54.4		30.0	55.6	55.6	16.0	41.6	41.6
Effective Green, g (s)	21.7	46.1	82.1	30.0	54.4		30.0	55.6	55.6	16.0	41.6	41.6
Actuated g/C Ratio	0.13	0.27	0.48	0.18	0.32		0.18	0.33	0.33	0.09	0.25	0.25
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	434	1723	758	873	1603		873	2079	507	320	1555	666
v/s Ratio Prot	0.10	0.31	0.42	c0.22	c0.36		c0.30	0.16		0.03	0.18	
v/s Ratio Perm									c0.68			0.03
v/c Ratio	0.80	1.14	0.86	1.26	1.11		1.67	0.50	2.08	0.28	0.72	0.12
Uniform Delay, d1	71.9	61.8	38.9	69.8	57.6		69.8	45.8	57.0	71.5	58.8	49.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.3	69.1	10.1	124.3	58.4		306.6	0.3	494.9	0.2	1.8	0.1
Delay (s)	81.2	130.9	48.9	194.2	116.1		376.5	46.1	552.0	71.7	60.6	49.9
Level of Service	F	F	D	F	F		F	D	F	E	E	D
Approach Delay (s)		106.4			145.8			350.2			59.0	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	193.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	169.7	Sum of lost time (s)	22.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2298	60	274	1858	0	50	30	220	10	0	10
Future Volume (vph)	20	2298	60	274	1858	0	50	30	220	10	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3	5.3	4.5	5.3		4.5	4.6	4.6	4.5	4.6	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.97	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.98	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	5036	1519	1752	5036		3400	1845	1541	1752	1536	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1752	5036	1519	1752	5036		3400	1845	1541	1752	1536	
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	29	3283	86	391	2654	0	71	43	314	14	0	14
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	125	0	13	0
Lane Group Flow (vph)	29	3283	50	391	2654	0	71	43	189	14	1	0
Confl. Peds. (#/hr)			5			34			5			6
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			
Actuated Green, G (s)	2.8	76.5	76.5	13.7	87.4		9.5	20.2	20.2	1.8	12.5	
Effective Green, g (s)	2.8	76.5	76.5	13.7	87.4		9.5	20.2	20.2	1.8	12.5	
Actuated g/C Ratio	0.02	0.58	0.58	0.10	0.67		0.07	0.15	0.15	0.01	0.10	
Clearance Time (s)	4.5	5.3	5.3	4.5	5.3		4.5	4.6	4.6	4.5	4.6	
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	37	2938	886	183	3357		246	284	237	24	146	
v/s Ratio Prot	0.02	c0.65		c0.22	0.53		c0.02	0.02		0.01	0.00	
v/s Ratio Perm			0.03						c0.12			
v/c Ratio	0.78	1.12	0.06	2.14	0.79		0.29	0.15	0.80	0.58	0.01	
Uniform Delay, d1	63.8	27.3	11.8	58.7	15.4		57.6	48.0	53.5	64.3	53.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	63.9	58.1	0.0	529.3	1.4		0.2	0.1	15.7	21.1	0.0	
Delay (s)	127.7	85.4	11.8	588.0	16.8		57.8	48.1	69.2	85.4	53.7	
Level of Service	F	F	B	F	B		E	D	E	F	D	
Approach Delay (s)		83.9			90.2			65.2			69.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	85.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	131.1	Sum of lost time (s)	18.9
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	1610	408	810	1030	590	119	493	360	570	578	142
Future Volume (vph)	262	1610	408	810	1030	590	119	493	360	570	578	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	4.0	5.8	5.8	5.3	5.7	5.7	5.3	5.7	5.7
Lane Util. Factor	0.97	0.91	0.88	0.94	0.91	1.00	0.94	0.91	0.88	0.94	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	2760	4942	5036	1568	4942	5036	2760	4942	5036	1539
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	2760	4942	5036	1568	4942	5036	2760	4942	5036	1539
Peak-hour factor, PHF	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	374	2300	583	1157	1471	843	170	704	514	814	826	203
RTOR Reduction (vph)	0	0	200	0	0	240	0	0	341	0	0	125
Lane Group Flow (vph)	374	2300	383	1157	1471	603	170	704	173	814	826	78
Confl. Peds. (#/hr)												7
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.0	49.7	49.7	25.0	60.9	60.9	10.0	25.9	25.9	26.9	42.8	42.8
Effective Green, g (s)	12.0	49.7	49.7	25.0	60.9	60.9	10.0	25.9	25.9	26.9	42.8	42.8
Actuated g/C Ratio	0.08	0.34	0.34	0.17	0.41	0.41	0.07	0.18	0.18	0.18	0.29	0.29
Clearance Time (s)	5.3	5.3	5.3	4.0	5.8	5.8	5.3	5.7	5.7	5.3	5.7	5.7
Vehicle Extension (s)	2.0	4.0	4.0	2.0	2.0	2.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	276	1693	928	835	2075	646	334	882	483	899	1458	445
v/s Ratio Prot	0.11	c0.46		c0.23	0.29		0.03	c0.14		c0.16	0.16	
v/s Ratio Perm			0.14			0.38			0.06			0.05
v/c Ratio	1.36	1.36	0.41	1.39	0.71	0.93	0.51	0.80	0.36	0.91	0.57	0.18
Uniform Delay, d1	67.9	49.1	37.8	61.4	36.1	41.5	66.5	58.4	53.6	59.2	44.6	39.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	181.7	165.3	0.4	181.0	0.9	20.2	0.4	5.4	0.6	12.2	0.6	0.3
Delay (s)	249.6	214.3	38.2	242.4	37.0	61.7	67.0	63.8	54.3	71.4	45.2	39.5
Level of Service	F	F	D	F	D	E	E	E	D	E	D	D
Approach Delay (s)		186.8			111.5			60.7			56.2	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	118.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	147.8	Sum of lost time (s)	22.1
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Attachment C: Queue Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	114	126	78	309	268	34	599	74	14	1367	163
v/c Ratio	0.63	0.36	0.21	0.88	0.77	0.29	0.29	0.08	0.13	0.70	0.18
Control Delay	72.7	48.3	6.6	86.1	66.4	66.5	17.4	0.8	63.2	27.4	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	48.3	6.6	86.1	66.4	66.5	17.4	0.8	63.2	27.4	7.2
Queue Length 50th (ft)	98	98	0	141	225	29	120	0	12	475	17
Queue Length 95th (ft)	149	134	27	#207	287	61	226	3	35	#670	62
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	257	610	570	350	523	257	2038	943	257	1957	886
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.21	0.14	0.88	0.51	0.13	0.29	0.08	0.05	0.70	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	141	19	528	34	18	92	22	250
v/c Ratio	0.52	0.14	0.12	0.70	0.05	0.14	0.21	0.17	0.54
Control Delay	50.0	14.5	47.0	27.2	0.2	49.5	24.7	49.2	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	14.5	47.0	27.2	0.2	49.5	24.7	49.2	27.5
Queue Length 50th (ft)	38	18	7	153	0	7	25	8	71
Queue Length 95th (ft)	111	82	32	331	0	31	70	35	159
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	297	1308	661	1505	1266	215	916	215	902
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.11	0.03	0.35	0.03	0.08	0.10	0.10	0.28

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	65	155	9	414	27	35	146
v/c Ratio	0.23	0.13	0.04	0.43	0.03	0.10	0.18
Control Delay	25.8	8.4	28.7	14.7	0.1	17.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	8.4	28.7	14.7	0.1	17.7	0.5
Queue Length 50th (ft)	15	12	2	78	0	8	0
Queue Length 95th (ft)	56	72	15	208	0	26	0
Internal Link Dist (ft)		175		1066			1603
Turn Bay Length (ft)	200		260		180	40	
Base Capacity (vph)	889	1391	889	1360	1132	728	1086
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.11	0.01	0.30	0.02	0.05	0.13

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	112	54	58	367	35	48	144	19	153
v/c Ratio	0.19	0.14	0.07	0.24	0.41	0.05	0.22	0.23	0.10	0.29
Control Delay	38.1	22.9	1.2	41.4	26.3	0.1	42.8	19.8	44.6	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	22.9	1.2	41.4	26.3	0.1	42.8	19.8	44.6	21.1
Queue Length 50th (ft)	26	46	0	29	175	0	25	36	10	44
Queue Length 95th (ft)	49	69	0	59	234	0	52	85	28	86
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	736	1059	920	736	1032	880	717	982	717	868
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.11	0.06	0.08	0.36	0.04	0.07	0.15	0.03	0.18

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	170	169	614	539	245	507	240	32	1385	171
v/c Ratio	0.17	0.22	0.17	0.72	0.60	0.36	0.35	0.30	0.07	0.65	0.17
Control Delay	53.7	41.0	18.3	55.9	43.0	53.8	30.1	5.1	54.0	37.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	41.0	18.3	55.9	43.0	53.8	30.1	5.1	54.0	37.8	8.3
Queue Length 50th (ft)	27	59	34	160	201	61	152	0	11	250	7
Queue Length 95th (ft)	62	100	68	240	269	109	254	61	31	371	40
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	857	1368	1332	1246	1349	1246	1478	799	857	2477	1135
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.12	0.13	0.49	0.40	0.20	0.34	0.30	0.04	0.56	0.15

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	427	9	1065	27	32	3	31	137
v/c Ratio	0.23	0.14	0.06	0.54	0.03	0.18	0.01	0.13	0.38
Control Delay	39.0	9.6	41.4	17.2	0.0	39.8	23.3	36.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	9.6	41.4	17.2	0.0	39.8	23.3	36.0	8.8
Queue Length 50th (ft)	14	8	3	99	0	10	1	10	1
Queue Length 95th (ft)	66	102	24	#520	0	53	8	51	40
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	727	3424	727	2188	987	608	673	608	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.12	0.01	0.49	0.03	0.05	0.00	0.05	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	10	394	17	45	998	44	20	7	7
v/c Ratio	0.04	0.10	0.01	0.15	0.25	0.08	0.02	0.03	0.01
Control Delay	28.0	9.2	0.0	25.4	8.8	25.4	0.1	28.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	9.2	0.0	25.4	8.8	25.4	0.1	28.7	0.0
Queue Length 50th (ft)	1	0	0	6	0	3	0	1	0
Queue Length 95th (ft)	23	97	0	62	238	31	0	19	0
Internal Link Dist (ft)		900			226				88
Turn Bay Length (ft)	220		170	330		200	200		
Base Capacity (vph)	984	4148	1273	984	4184	2190	1289	984	1175
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.09	0.01	0.05	0.24	0.02	0.02	0.01	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	84	218	117	6	598	21	28	4	3	44	317
v/c Ratio	0.11	0.10	0.16	0.01	0.36	0.04	0.06	0.00	0.00	0.13	0.46
Control Delay	28.9	14.4	5.8	32.8	19.1	0.1	34.7	0.0	0.0	29.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	14.4	5.8	32.8	19.1	0.1	34.7	0.0	0.0	29.5	5.1
Queue Length 50th (ft)	10	7	0	1	46	0	3	0	0	12	1
Queue Length 95th (ft)	51	63	41	8	161	0	24	0	0	63	45
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1550	3647	1142	1550	3647	1133	1550	1084	1084	802	939
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.10	0.00	0.16	0.02	0.02	0.00	0.00	0.05	0.34

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	61	202	317	586	1279	232
v/c Ratio	0.11	0.11	0.19	0.60	0.29	0.98	0.33
Control Delay	24.1	24.1	4.4	42.0	10.4	50.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	24.1	4.4	42.0	10.4	50.4	5.9
Queue Length 50th (ft)	23	24	0	86	85	~406	12
Queue Length 95th (ft)	68	69	29	151	113	518	61
Internal Link Dist (ft)		2684			478	1322	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	568	568	1125	1157	2037	1304	698
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.18	0.27	0.29	0.98	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	68	118	117	409	623	971	140
v/c Ratio	0.18	0.15	0.15	0.96	0.19	0.75	0.22
Control Delay	41.8	0.4	0.4	70.8	9.4	32.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	0.4	0.4	70.8	9.4	32.5	10.0
Queue Length 50th (ft)	14	0	0	170	19	173	8
Queue Length 95th (ft)	39	0	0	#464	100	#399	48
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1014	920	920	428	3336	1297	636
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.13	0.13	0.96	0.19	0.75	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	186	52	192	439	127	505	118	67	1284	329
v/c Ratio	0.45	0.37	0.10	0.58	0.83	0.48	0.32	0.16	0.49	0.85	0.43
Control Delay	62.8	39.9	0.4	62.9	55.8	62.8	26.8	4.4	68.1	41.2	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	39.9	0.4	62.9	55.8	62.8	26.8	4.4	68.1	41.2	14.2
Queue Length 50th (ft)	48	127	0	80	338	53	148	0	55	510	77
Queue Length 95th (ft)	74	174	0	110	408	80	211	29	96	#696	161
Internal Link Dist (ft)		743			912		950			1028	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	366	559	556	496	614	366	1564	745	215	1511	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.33	0.09	0.39	0.71	0.35	0.32	0.16	0.31	0.85	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	205	27	475	132	17	240	87	223	402
v/c Ratio	0.82	0.22	0.21	0.81	0.24	0.14	0.62	0.47	0.42	0.55
Control Delay	56.2	17.8	49.7	44.2	9.3	49.2	42.1	51.4	30.3	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	17.8	49.7	44.2	9.3	49.2	42.1	51.4	30.3	6.0
Queue Length 50th (ft)	184	72	16	263	9	10	135	51	101	0
Queue Length 95th (ft)	205	101	31	275	17	23	138	71	119	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	409	940	409	652	606	409	460	409	582	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.22	0.07	0.73	0.22	0.04	0.52	0.21	0.38	0.52

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	180	52	11	347	152	62	108	129	234
v/c Ratio	0.21	0.15	0.09	0.06	0.35	0.28	0.27	0.20	0.43	0.36
Control Delay	39.8	21.1	0.9	41.0	26.8	7.2	39.1	19.3	37.5	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	21.1	0.9	41.0	26.8	7.2	39.1	19.3	37.5	12.1
Queue Length 50th (ft)	22	33	0	5	83	0	30	32	63	41
Queue Length 95th (ft)	43	52	0	17	96	14	54	58	91	65
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	667	1956	887	667	1954	904	667	885	667	835
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.09	0.06	0.02	0.18	0.17	0.09	0.12	0.19	0.28

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	45	228	96	357	259	120	78	613	118	129	1273	101
v/c Ratio	0.14	0.36	0.11	0.72	0.32	0.16	0.23	0.51	0.26	0.59	0.82	0.19
Control Delay	56.1	30.2	6.1	58.2	23.9	4.6	56.7	41.3	8.9	63.6	45.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	30.2	6.1	58.2	23.9	4.6	56.7	41.3	8.9	63.6	45.6	9.6
Queue Length 50th (ft)	17	122	0	139	127	0	29	154	0	98	~369	5
Queue Length 95th (ft)	37	201	17	191	200	29	55	191	38	158	386	39
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	639	728	999	639	818	749	655	1498	536	329	1554	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.31	0.10	0.56	0.32	0.16	0.12	0.41	0.22	0.39	0.82	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	141	8	43	472	10	9	71	5	71
v/c Ratio	0.07	0.12	0.01	0.14	0.36	0.01	0.03	0.19	0.02	0.20
Control Delay	26.5	11.4	0.0	24.6	10.0	0.0	27.7	9.0	28.5	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	11.4	0.0	24.6	10.0	0.0	27.7	9.0	28.5	8.6
Queue Length 50th (ft)	2	8	0	5	32	0	1	1	1	1
Queue Length 95th (ft)	30	86	0	51	275	0	18	28	12	27
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	1254	1633	1325	1254	1633	1322	1254	1272	1254	1235
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.09	0.01	0.03	0.29	0.01	0.01	0.06	0.00	0.06

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	60	88	177

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	132	96	142	97	54	782	155	20	861	41
v/c Ratio	0.43	0.49	0.28	0.51	0.30	0.42	0.36	0.15	0.18	0.43	0.05
Control Delay	65.8	53.5	3.8	61.8	42.0	65.4	15.3	3.6	59.6	19.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	53.5	3.8	61.8	42.0	65.4	15.3	3.6	59.6	19.5	0.1
Queue Length 50th (ft)	45	105	0	58	67	43	116	0	16	191	0
Queue Length 95th (ft)	69	104	0	70	73	66	238	16	33	279	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	159	562	564	526	665	159	2178	1012	159	1986	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.23	0.17	0.27	0.15	0.34	0.36	0.15	0.13	0.43	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	308	8	216	6	13	48	8	87
v/c Ratio	0.19	0.25	0.03	0.19	0.01	0.06	0.13	0.04	0.22
Control Delay	26.5	11.4	27.0	13.2	0.0	28.1	12.3	28.4	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	11.4	27.0	13.2	0.0	28.1	12.3	28.4	11.0
Queue Length 50th (ft)	5	23	1	16	0	2	4	1	5
Queue Length 95th (ft)	38	141	13	104	0	17	21	13	27
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	536	1657	1221	1731	1446	383	1441	383	1425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.19	0.01	0.12	0.00	0.03	0.03	0.02	0.06

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	62	211	155	6	15	37
v/c Ratio	0.21	0.14	0.12	0.01	0.04	0.04
Control Delay	20.4	5.5	11.4	0.0	12.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	5.5	11.4	0.0	12.5	0.1
Queue Length 50th (ft)	6	0	0	0	1	0
Queue Length 95th (ft)	41	63	69	0	10	0
Internal Link Dist (ft)		175	1067			1603
Turn Bay Length (ft)	200			180	40	
Base Capacity (vph)	1023	1574	1553	1292	988	1265
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13	0.10	0.00	0.02	0.03

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	155	30	11	118	18	17	47	15	47
v/c Ratio	0.10	0.11	0.02	0.04	0.09	0.02	0.06	0.10	0.05	0.10
Control Delay	19.4	9.9	0.1	25.6	16.0	0.0	25.1	11.9	25.4	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.4	9.9	0.1	25.6	16.0	0.0	25.1	11.9	25.4	10.1
Queue Length 50th (ft)	2	0	0	1	0	0	1	1	1	1
Queue Length 95th (ft)	28	80	0	16	78	0	22	25	20	20
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	1085	1529	1316	1085	1529	1278	1085	1256	1085	1196
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.10	0.02	0.01	0.08	0.01	0.02	0.04	0.01	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	267	678	479	343	325	290	622	325	72	847	138
v/c Ratio	0.54	0.72	0.37	0.49	0.36	0.42	0.58	0.47	0.15	0.51	0.17
Control Delay	54.3	44.4	19.7	52.3	36.1	51.9	39.6	6.1	51.7	38.5	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	44.4	19.7	52.3	36.1	51.9	39.6	6.1	51.7	38.5	6.2
Queue Length 50th (ft)	95	240	110	83	99	69	215	0	24	154	0
Queue Length 95th (ft)	139	275	142	118	131	103	256	9	47	176	11
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	882	1405	1605	1282	1368	1282	1396	812	882	2525	1164
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.48	0.30	0.27	0.24	0.23	0.45	0.40	0.08	0.34	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	1014	10	561	21	75	8	20	43
v/c Ratio	0.28	0.30	0.05	0.28	0.02	0.28	0.03	0.10	0.15
Control Delay	33.3	12.2	37.9	18.1	0.1	33.4	22.3	37.3	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	12.2	37.9	18.1	0.1	33.4	22.3	37.3	11.5
Queue Length 50th (ft)	22	64	3	77	0	22	2	6	1
Queue Length 95th (ft)	76	196	19	180	0	76	11	30	17
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	956	3561	956	2490	1110	797	891	797	791
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28	0.01	0.23	0.02	0.09	0.01	0.03	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	23	896	50	40	497	63	60	1	1
v/c Ratio	0.10	0.27	0.05	0.16	0.14	0.13	0.07	0.00	0.00
Control Delay	30.4	12.1	0.2	29.0	9.8	27.6	0.2	34.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	12.1	0.2	29.0	9.8	27.6	0.2	34.0	0.0
Queue Length 50th (ft)	3	25	0	6	12	4	0	0	0
Queue Length 95th (ft)	31	170	0	45	93	31	0	5	0
Internal Link Dist (ft)		900			226				88
Turn Bay Length (ft)	220		170	330		200	200		
Base Capacity (vph)	894	3728	1153	894	3785	1996	1219	894	1113
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.24	0.04	0.04	0.13	0.03	0.05	0.00	0.00

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	157	700	58	3	312	28	96	4	3	36	110
v/c Ratio	0.22	0.27	0.07	0.00	0.17	0.05	0.21	0.00	0.00	0.16	0.22
Control Delay	29.7	16.1	1.3	34.0	23.2	0.2	33.3	0.0	0.0	35.4	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	16.1	1.3	34.0	23.2	0.2	33.3	0.0	0.0	35.4	6.0
Queue Length 50th (ft)	22	50	0	0	32	0	14	0	0	11	0
Queue Length 95th (ft)	67	146	0	4	70	0	46	0	0	44	16
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1421	3178	1014	1421	3178	998	1421	977	977	732	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.22	0.06	0.00	0.10	0.03	0.07	0.00	0.00	0.05	0.14

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	125	125	504	150	696	806	137
v/c Ratio	0.22	0.22	0.39	0.38	0.38	0.66	0.21
Control Delay	23.6	23.6	3.4	40.4	12.6	26.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	23.6	3.4	40.4	12.6	26.6	1.4
Queue Length 50th (ft)	49	49	0	39	111	192	0
Queue Length 95th (ft)	88	88	0	60	105	183	0
Internal Link Dist (ft)		2680			502	1332	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	575	575	1329	1170	2024	1309	699
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.38	0.13	0.34	0.62	0.20

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	68	127	126	162	450	495	53
v/c Ratio	0.11	0.15	0.15	0.50	0.16	0.49	0.10
Control Delay	26.3	0.4	0.4	34.6	9.8	23.7	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	0.4	0.4	34.6	9.8	23.7	0.6
Queue Length 50th (ft)	7	0	0	38	14	53	0
Queue Length 95th (ft)	28	0	0	130	73	161	0
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1660	1092	1092	699	4449	2100	963
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.12	0.12	0.23	0.10	0.24	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	262	190	132	117	147	63	673	118	28	670	110
v/c Ratio	0.69	0.55	0.33	0.46	0.53	0.31	0.35	0.13	0.28	0.36	0.13
Control Delay	60.6	48.6	8.0	58.6	46.9	57.7	18.7	4.5	60.4	19.6	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	48.6	8.0	58.6	46.9	57.7	18.7	4.5	60.4	19.6	4.7
Queue Length 50th (ft)	101	137	0	45	97	24	151	0	21	151	0
Queue Length 95th (ft)	111	136	20	58	103	37	205	18	41	203	18
Internal Link Dist (ft)		743			912		950			906	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	439	544	548	382	495	325	1933	897	167	1868	872
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.35	0.24	0.31	0.30	0.19	0.35	0.13	0.17	0.36	0.13

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	316	5	175	16	11	49	28	54	142
v/c Ratio	0.35	0.29	0.03	0.23	0.02	0.06	0.13	0.13	0.12	0.28
Control Delay	28.9	12.8	33.7	20.7	0.1	33.0	18.6	31.8	17.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	12.8	33.7	20.7	0.1	33.0	18.6	31.8	17.8	5.7
Queue Length 50th (ft)	21	30	1	31	0	2	8	6	10	0
Queue Length 95th (ft)	66	129	9	87	0	15	25	27	30	3
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	786	1248	786	1242	1062	786	843	786	873	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.25	0.01	0.14	0.02	0.01	0.06	0.04	0.06	0.17

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	246	43	7	111	65	26	28	70	106
v/c Ratio	0.34	0.15	0.06	0.05	0.09	0.11	0.16	0.05	0.35	0.64
Control Delay	37.5	18.5	0.1	38.8	26.6	2.8	38.1	16.1	38.2	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	18.5	0.1	38.8	26.6	2.8	38.1	16.1	38.2	33.4
Queue Length 50th (ft)	27	33	0	3	19	0	10	6	27	13
Queue Length 95th (ft)	48	52	0	11	30	0	24	16	49	25
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	614	1844	850	614	1844	853	614	806	584	166
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.13	0.05	0.01	0.06	0.08	0.04	0.03	0.12	0.64

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	60	47	79	140	47	25	76	756	140	28	747	65
v/c Ratio	0.11	0.10	0.11	0.24	0.10	0.05	0.14	0.29	0.17	0.10	0.35	0.09
Control Delay	37.9	26.1	4.5	37.4	25.4	0.2	37.8	19.2	5.7	39.6	23.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	26.1	4.5	37.4	25.4	0.2	37.8	19.2	5.7	39.6	23.7	3.2
Queue Length 50th (ft)	11	17	0	27	17	0	14	68	0	11	100	0
Queue Length 95th (ft)	35	39	3	66	37	0	42	161	15	40	160	0
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	1116	955	1437	1116	963	850	1116	2611	859	575	2507	806
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.05	0.13	0.05	0.03	0.07	0.29	0.16	0.05	0.30	0.08

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	255	11	9	174	9	8	14	3	26
v/c Ratio	0.11	0.16	0.01	0.03	0.11	0.01	0.03	0.04	0.01	0.08
Control Delay	20.1	8.9	0.0	21.7	9.6	0.0	21.6	8.2	22.5	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	8.9	0.0	21.7	9.6	0.0	21.6	8.2	22.5	7.0
Queue Length 50th (ft)	4	0	0	1	0	0	1	1	1	0
Queue Length 95th (ft)	30	122	0	13	90	0	12	8	7	10
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	1297	1661	1347	1297	1661	1363	1297	1323	1297	1291
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.15	0.01	0.01	0.10	0.01	0.01	0.01	0.00	0.02

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	28	106	79

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	114	126	78	309	333	34	609	98	145	1387	163
v/c Ratio	0.65	0.31	0.19	0.92	0.85	0.31	0.40	0.13	0.73	0.77	0.20
Control Delay	75.2	43.9	5.8	92.3	67.4	67.8	30.2	3.5	78.4	33.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.2	43.9	5.8	92.3	67.4	67.8	30.2	3.5	78.4	33.0	8.5
Queue Length 50th (ft)	99	94	0	141	273	29	193	0	125	540	19
Queue Length 95th (ft)	150	127	25	#212	338	61	286	23	185	#801	69
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	251	602	564	337	507	251	1520	734	251	1807	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.21	0.14	0.92	0.66	0.14	0.40	0.13	0.58	0.77	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	321	31	604	64	18	107	81	250
v/c Ratio	0.60	0.35	0.22	0.80	0.09	0.18	0.33	0.46	0.51
Control Delay	58.8	19.0	50.4	34.2	2.6	53.9	29.8	55.2	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	19.0	50.4	34.2	2.6	53.9	29.8	55.2	28.1
Queue Length 50th (ft)	48	95	14	238	0	8	40	37	82
Queue Length 95th (ft)	113	192	45	405	6	31	77	#101	160
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	247	1171	565	1387	1174	176	774	182	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.27	0.05	0.44	0.05	0.10	0.14	0.45	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	254	118	397	431	27	107	154	35	323
v/c Ratio	0.49	0.59	0.27	0.82	0.56	0.04	0.54	0.29	0.10	0.62
Control Delay	38.9	31.1	6.8	42.1	21.8	0.1	34.2	9.1	20.6	25.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	31.1	6.8	42.1	21.8	0.1	34.2	9.1	20.6	25.2
Queue Length 50th (ft)	44	98	0	155	143	0	38	13	11	101
Queue Length 95th (ft)	85	151	23	#298	234	0	76	39	28	155
Internal Link Dist (ft)		175			1066			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	517	816	744	517	821	714	220	583	376	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.31	0.16	0.77	0.52	0.04	0.49	0.26	0.09	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	88	280	72	58	688	35	86	168	19	280
v/c Ratio	0.45	0.39	0.11	0.38	1.03	0.06	0.48	0.27	0.16	0.59
Control Delay	49.0	27.6	3.1	51.8	77.3	0.2	52.5	21.9	49.6	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	27.6	3.1	51.8	77.3	0.2	52.5	21.9	49.6	31.1
Queue Length 50th (ft)	52	134	0	34	~514	0	51	56	11	119
Queue Length 95th (ft)	78	169	3	61	#587	0	81	100	28	166
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	424	714	652	424	670	605	424	733	424	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.39	0.11	0.14	1.03	0.06	0.20	0.23	0.04	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	170	169	645	549	245	529	266	50	1385	171
v/c Ratio	0.18	0.24	0.17	0.78	0.65	0.38	0.42	0.36	0.11	0.68	0.18
Control Delay	54.9	43.5	19.2	58.2	45.7	55.1	34.6	5.5	55.0	40.0	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	43.5	19.2	58.2	45.7	55.1	34.6	5.5	55.0	40.0	8.9
Queue Length 50th (ft)	28	61	35	171	211	62	165	0	18	259	8
Queue Length 95th (ft)	63	103	69	252	280	109	271	65	44	379	42
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	827	1307	1276	1202	1287	1202	1344	765	827	2367	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.13	0.13	0.54	0.43	0.20	0.39	0.35	0.06	0.59	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	61	457	9	1089	27	32	3	31	157
v/c Ratio	0.33	0.14	0.07	0.55	0.03	0.21	0.01	0.15	0.45
Control Delay	41.1	9.8	42.9	18.3	0.0	41.8	24.3	37.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	9.8	42.9	18.3	0.0	41.8	24.3	37.6	9.6
Queue Length 50th (ft)	21	10	3	114	0	11	1	11	1
Queue Length 95th (ft)	85	111	24	#569	0	54	8	53	43
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	640	3251	640	2013	916	534	595	534	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.14	0.01	0.54	0.03	0.06	0.01	0.06	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	10	424	17	153	1022	44	20
v/c Ratio	0.04	0.18	0.02	0.39	0.25	0.09	0.02
Control Delay	31.9	15.2	0.1	25.1	8.4	28.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	15.2	0.1	25.1	8.4	28.6	0.1
Queue Length 50th (ft)	1	13	0	16	0	2	0
Queue Length 95th (ft)	24	119	0	164	245	33	0
Internal Link Dist (ft)		900			226		
Turn Bay Length (ft)	220		170	330		200	200
Base Capacity (vph)	973	3925	1210	973	4043	2173	1296
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.11	0.01	0.16	0.25	0.02	0.02

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	116	295	117	6	789	25	28	4	3	46	382
v/c Ratio	0.18	0.12	0.15	0.01	0.49	0.04	0.07	0.00	0.00	0.16	0.56
Control Delay	31.9	14.1	5.6	36.0	21.6	0.1	37.5	0.0	0.0	32.5	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	14.1	5.6	36.0	21.6	0.1	37.5	0.0	0.0	32.5	6.2
Queue Length 50th (ft)	15	10	0	1	67	0	4	0	0	13	1
Queue Length 95th (ft)	69	83	41	8	221	0	24	0	0	68	49
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1284	3195	1015	1284	3174	999	1284	985	985	669	877
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.09	0.12	0.00	0.25	0.03	0.02	0.00	0.00	0.07	0.44

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	94	94	209	350	600	1285	380
v/c Ratio	0.17	0.17	0.20	0.69	0.31	1.05	0.57
Control Delay	26.1	26.1	4.6	45.8	11.3	69.4	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	26.1	4.6	45.8	11.3	69.4	15.0
Queue Length 50th (ft)	38	38	0	98	92	~440	79
Queue Length 95th (ft)	102	102	31	168	121	#587	179
Internal Link Dist (ft)		2684			478	1322	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	540	540	1086	1100	1978	1228	669
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.17	0.19	0.32	0.30	1.05	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	68	118	117	409	678	1082	140
v/c Ratio	0.20	0.15	0.15	0.98	0.21	0.86	0.23
Control Delay	43.1	0.4	0.4	76.7	9.9	38.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	0.4	0.4	76.7	9.9	38.3	10.3
Queue Length 50th (ft)	14	0	0	172	23	207	8
Queue Length 95th (ft)	40	0	0	#470	111	#491	49
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	974	911	911	418	3276	1255	619
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.13	0.13	0.98	0.21	0.86	0.23

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	116	186	52	192	465	127	581	118	119	1436	329
v/c Ratio	0.48	0.37	0.10	0.60	0.87	0.50	0.43	0.18	0.69	1.00	0.46
Control Delay	64.2	39.7	0.4	64.4	60.3	64.2	32.5	4.9	76.6	62.0	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	39.7	0.4	64.4	60.3	64.2	32.5	4.9	76.6	62.0	17.2
Queue Length 50th (ft)	49	125	0	81	361	54	193	0	98	~678	96
Queue Length 95th (ft)	75	176	0	111	444	80	254	30	152	#845	182
Internal Link Dist (ft)		743			912		950			949	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	353	548	547	483	597	353	1355	663	208	1439	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.34	0.10	0.40	0.78	0.36	0.43	0.18	0.57	1.00	0.46

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	312	279	27	475	132	53	240	87	223	402
v/c Ratio	0.83	0.31	0.23	0.84	0.24	0.38	0.65	0.50	0.55	0.61
Control Delay	57.9	18.3	51.1	47.2	9.7	52.8	43.6	53.7	38.7	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	18.3	51.1	47.2	9.7	52.8	43.6	53.7	38.7	7.6
Queue Length 50th (ft)	186	99	16	268	9	32	136	52	123	0
Queue Length 95th (ft)	206	128	32	279	18	51	138	71	126	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	391	892	391	619	581	391	442	391	466	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.31	0.07	0.77	0.23	0.14	0.54	0.22	0.48	0.58

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	180	52	11	347	152	62	205	129	432
v/c Ratio	0.26	0.18	0.10	0.08	0.43	0.33	0.33	0.31	0.50	0.58
Control Delay	41.7	22.2	1.0	42.0	29.1	7.9	41.4	21.5	40.6	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	22.2	1.0	42.0	29.1	7.9	41.4	21.5	40.6	21.7
Queue Length 50th (ft)	22	34	0	5	85	0	31	70	63	158
Queue Length 95th (ft)	43	53	0	17	98	15	55	107	92	202
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	545	1640	760	545	1637	782	545	759	545	751
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.11	0.07	0.02	0.21	0.19	0.11	0.27	0.24	0.58

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	148	260	104	400	322	120	94	670	139	129	1400	293
v/c Ratio	0.44	0.43	0.12	0.77	0.46	0.18	0.30	0.58	0.31	0.60	0.94	0.48
Control Delay	58.4	32.9	6.0	60.1	28.7	5.2	58.2	43.9	8.7	64.5	56.5	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	32.9	6.0	60.1	28.7	5.2	58.2	43.9	8.7	64.5	56.5	12.9
Queue Length 50th (ft)	58	148	0	158	168	0	36	177	0	100	~484	42
Queue Length 95th (ft)	91	231	17	213	267	31	64	213	40	158	445	95
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	627	698	967	627	786	724	627	1409	526	323	1490	610
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.37	0.11	0.64	0.41	0.17	0.15	0.48	0.26	0.40	0.94	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	344	41	66	566	10	25	90	5	71
v/c Ratio	0.11	0.34	0.05	0.29	0.47	0.01	0.14	0.27	0.03	0.28
Control Delay	33.8	15.4	0.7	31.8	12.6	0.0	33.7	9.6	35.0	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	15.4	0.7	31.8	12.6	0.0	33.7	9.6	35.0	11.9
Queue Length 50th (ft)	4	58	0	14	47	0	6	2	1	1
Queue Length 95th (ft)	30	212	0	70	351	0	36	31	13	28
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	788	1473	1204	788	1473	1201	788	859	788	831
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.23	0.03	0.08	0.38	0.01	0.03	0.10	0.01	0.09

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	69	108	189

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	132	96	142	200	54	797	163	68	868	41
v/c Ratio	0.43	0.48	0.28	0.51	0.57	0.42	0.40	0.17	0.50	0.44	0.05
Control Delay	65.8	52.9	3.7	61.8	36.5	65.4	19.1	3.9	68.6	19.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	52.9	3.7	61.8	36.5	65.4	19.1	3.9	68.6	19.8	0.1
Queue Length 50th (ft)	45	105	0	58	105	43	173	0	54	193	0
Queue Length 95th (ft)	69	104	0	70	102	66	254	17	80	282	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	159	562	564	526	655	159	1985	940	159	1977	906
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.23	0.17	0.27	0.31	0.34	0.40	0.17	0.43	0.44	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	372	29	334	52	13	53	29	87
v/c Ratio	0.22	0.36	0.13	0.35	0.06	0.08	0.16	0.16	0.22
Control Delay	34.1	15.3	32.9	16.0	1.9	36.0	16.8	35.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	15.3	32.9	16.0	1.9	36.0	16.8	35.2	13.3
Queue Length 50th (ft)	9	30	6	51	0	3	6	6	9
Queue Length 95th (ft)	42	180	31	161	0	19	25	32	30
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	443	1542	1013	1683	1408	316	1267	316	1274
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.24	0.03	0.20	0.04	0.04	0.04	0.09	0.07

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	358	40	132	162	6	160	230	15	99
v/c Ratio	0.43	0.59	0.07	0.44	0.26	0.01	0.46	0.42	0.05	0.20
Control Delay	30.6	22.5	1.5	30.6	17.8	0.0	24.6	11.0	19.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	22.5	1.5	30.6	17.8	0.0	24.6	11.0	19.2	14.3
Queue Length 50th (ft)	37	95	0	39	38	0	43	22	4	16
Queue Length 95th (ft)	81	161	0	83	76	0	83	44	14	39
Internal Link Dist (ft)		175			1067			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	734	1121	963	734	1122	955	559	787	452	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.32	0.04	0.18	0.14	0.01	0.29	0.29	0.03	0.13

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	85	385	56	11	220	18	29	81	15	84
v/c Ratio	0.24	0.30	0.05	0.05	0.21	0.02	0.11	0.15	0.06	0.19
Control Delay	25.2	12.2	1.3	32.9	19.2	0.0	31.2	16.4	32.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	12.2	1.3	32.9	19.2	0.0	31.2	16.4	32.5	13.0
Queue Length 50th (ft)	17	37	0	2	39	0	6	14	3	7
Queue Length 95th (ft)	64	191	0	18	134	0	33	46	21	31
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	955	1346	1170	955	1324	1119	955	1128	955	1053
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.29	0.05	0.01	0.17	0.02	0.03	0.07	0.02	0.08

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	267	678	479	397	340	290	631	335	79	847	138
v/c Ratio	0.55	0.73	0.38	0.56	0.37	0.43	0.67	0.51	0.17	0.50	0.17
Control Delay	54.9	45.6	21.4	53.4	36.2	52.6	43.6	6.6	52.1	38.4	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	45.6	21.4	53.4	36.2	52.6	43.6	6.6	52.1	38.4	6.2
Queue Length 50th (ft)	96	241	116	98	104	70	220	0	26	154	0
Queue Length 95th (ft)	139	281	153	134	135	103	260	8	51	176	11
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	870	1378	1577	1266	1344	1266	1378	811	870	2492	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.49	0.30	0.31	0.25	0.23	0.46	0.41	0.09	0.34	0.12

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	1026	10	600	21	75	8	20	74
v/c Ratio	0.35	0.35	0.06	0.39	0.03	0.33	0.03	0.12	0.26
Control Delay	36.3	13.4	39.1	21.0	0.1	36.5	23.3	38.7	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	13.4	39.1	21.0	0.1	36.5	23.3	38.7	10.4
Queue Length 50th (ft)	25	65	3	84	0	23	2	6	1
Queue Length 95th (ft)	82	198	20	194	0	77	11	31	20
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	787	3225	787	2238	1008	656	744	656	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.32	0.01	0.27	0.02	0.11	0.01	0.03	0.11

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	23	907	50	217	537	63	60
v/c Ratio	0.12	0.45	0.07	0.55	0.14	0.16	0.07
Control Delay	37.0	18.3	0.2	31.8	8.7	33.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	18.3	0.2	31.8	8.7	33.7	0.2
Queue Length 50th (ft)	7	72	0	58	14	9	0
Queue Length 95th (ft)	33	197	0	175	99	35	0
Internal Link Dist (ft)		900			226		
Turn Bay Length (ft)	220		170	330		200	200
Base Capacity (vph)	715	2983	943	715	3810	1597	1122
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.30	0.05	0.30	0.14	0.04	0.05

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	209	826	58	3	384	29	96	4	3	41	134
v/c Ratio	0.31	0.31	0.07	0.00	0.33	0.07	0.23	0.00	0.00	0.13	0.27
Control Delay	30.0	16.2	1.3	35.0	24.4	0.3	34.2	0.0	0.0	31.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	16.2	1.3	35.0	24.4	0.3	34.2	0.0	0.0	31.6	6.2
Queue Length 50th (ft)	31	61	0	0	41	0	15	0	0	13	0
Queue Length 95th (ft)	85	172	0	4	87	0	47	0	0	49	15
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1302	3139	1002	1302	3139	987	1302	930	930	678	734
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.26	0.06	0.00	0.12	0.03	0.07	0.00	0.00	0.06	0.18

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	183	184	516	163	700	817	197
v/c Ratio	0.32	0.32	0.40	0.41	0.38	0.66	0.29
Control Delay	25.1	25.1	3.4	40.9	12.5	26.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	25.1	3.4	40.9	12.5	26.7	3.9
Queue Length 50th (ft)	75	75	0	43	112	196	0
Queue Length 95th (ft)	124	125	0	65	106	187	13
Internal Link Dist (ft)		2680			502	1332	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	571	571	1332	1163	2015	1301	696
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.32	0.39	0.14	0.35	0.63	0.28

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	68	127	126	162	543	538	130
v/c Ratio	0.11	0.15	0.15	0.50	0.19	0.51	0.24
Control Delay	26.9	0.4	0.4	35.1	9.8	23.9	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	0.4	0.4	35.1	9.8	23.9	8.2
Queue Length 50th (ft)	8	0	0	40	17	59	2
Queue Length 95th (ft)	28	0	0	130	87	175	10
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1618	1079	1079	681	4449	2045	949
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.12	0.12	0.24	0.12	0.26	0.14

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	262	190	132	117	186	63	792	118	46	725	110
v/c Ratio	0.69	0.52	0.32	0.46	0.61	0.31	0.44	0.14	0.39	0.40	0.13
Control Delay	60.6	46.4	7.7	58.6	46.1	57.7	22.4	4.8	62.4	20.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	46.4	7.7	58.6	46.1	57.7	22.4	4.8	62.4	20.9	4.7
Queue Length 50th (ft)	101	134	0	45	115	24	198	0	35	174	0
Queue Length 95th (ft)	111	136	20	58	120	37	252	18	57	221	18
Internal Link Dist (ft)		743			912		950			964	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	439	544	548	382	494	325	1798	843	167	1827	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.35	0.24	0.31	0.38	0.19	0.44	0.14	0.28	0.40	0.13

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	339	5	175	16	60	49	28	54	142
v/c Ratio	0.37	0.33	0.03	0.24	0.02	0.26	0.11	0.14	0.15	0.33
Control Delay	30.8	14.4	35.0	22.4	0.1	32.1	17.7	33.4	23.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	14.4	35.0	22.4	0.1	32.1	17.7	33.4	23.6	7.5
Queue Length 50th (ft)	30	64	2	47	0	17	8	8	15	0
Queue Length 95th (ft)	66	138	9	87	0	45	25	27	33	3
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	739	1163	739	1168	1005	739	795	739	807	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.29	0.01	0.15	0.02	0.08	0.06	0.04	0.07	0.19

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	246	43	7	111	65	26	184	70	180
v/c Ratio	0.28	0.15	0.06	0.04	0.09	0.11	0.12	0.30	0.28	1.08
Control Delay	35.9	18.5	0.1	38.5	26.6	2.8	37.3	20.9	36.1	122.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	18.5	0.1	38.5	26.6	2.8	37.3	20.9	36.1	122.4
Queue Length 50th (ft)	27	33	0	3	19	0	10	56	27	64
Queue Length 95th (ft)	48	52	0	11	30	0	24	76	49	91
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	746	1888	868	746	1888	871	746	923	709	167
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.13	0.05	0.01	0.06	0.07	0.03	0.20	0.10	1.08

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	222	97	91	154	71	25	82	843	172	28	794	134
v/c Ratio	0.38	0.21	0.12	0.28	0.16	0.06	0.15	0.41	0.24	0.10	0.49	0.23
Control Delay	37.9	28.3	5.9	38.9	28.5	0.2	39.4	20.7	5.6	41.4	25.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	28.3	5.9	38.9	28.5	0.2	39.4	20.7	5.6	41.4	25.3	6.5
Queue Length 50th (ft)	47	38	0	31	27	0	16	78	0	11	107	0
Queue Length 95th (ft)	97	69	6	73	56	0	45	186	13	40	176	16
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	1077	929	1399	1077	920	816	1077	2572	864	555	2420	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.10	0.07	0.14	0.08	0.03	0.08	0.33	0.20	0.05	0.33	0.17

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	327	23	26	321	9	33	44	3	26
v/c Ratio	0.12	0.24	0.02	0.10	0.24	0.01	0.12	0.11	0.01	0.09
Control Delay	27.4	13.4	0.1	28.1	13.6	0.0	27.4	7.7	31.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	13.4	0.1	28.1	13.6	0.0	27.4	7.7	31.5	11.2
Queue Length 50th (ft)	3	0	0	2	0	0	3	0	0	0
Queue Length 95th (ft)	34	164	0	29	163	0	34	13	8	11
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	1161	1546	1259	1161	1546	1274	1161	1162	1161	1153
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.21	0.02	0.02	0.21	0.01	0.03	0.04	0.00	0.02

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	43	113	99

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	151	81	314	279	35	605	81	58	1453	163
v/c Ratio	0.71	0.41	0.21	0.93	0.81	0.31	0.34	0.10	0.45	0.78	0.19
Control Delay	77.8	48.4	6.9	94.9	70.0	68.1	23.1	1.5	71.3	31.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	48.4	6.9	94.9	70.0	68.1	23.1	1.5	71.3	31.9	7.8
Queue Length 50th (ft)	121	117	0	144	234	30	168	0	50	564	19
Queue Length 95th (ft)	179	156	28	#217	298	63	250	8	91	#808	65
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	251	602	564	337	513	251	1794	844	251	1872	852
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.25	0.14	0.93	0.54	0.14	0.34	0.10	0.23	0.78	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	203	27	541	41	27	108	54	270
v/c Ratio	0.58	0.23	0.19	0.77	0.06	0.24	0.30	0.42	0.58
Control Delay	57.1	18.2	50.1	32.9	0.2	53.8	29.1	56.8	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	18.2	50.1	32.9	0.2	53.8	29.1	56.8	30.8
Queue Length 50th (ft)	52	62	13	231	0	14	42	27	109
Queue Length 95th (ft)	114	120	41	353	0	42	81	68	177
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	257	1173	589	1404	1187	184	815	184	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.17	0.05	0.39	0.03	0.15	0.13	0.29	0.33

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	68	243	14	432	27	41	149
v/c Ratio	0.26	0.21	0.07	0.45	0.03	0.13	0.19
Control Delay	27.1	9.2	29.1	15.8	0.1	18.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	9.2	29.1	15.8	0.1	18.6	0.5
Queue Length 50th (ft)	16	22	3	88	0	9	0
Queue Length 95th (ft)	58	112	21	223	0	29	0
Internal Link Dist (ft)		175		1066			1603
Turn Bay Length (ft)	200		260		180	40	
Base Capacity (vph)	838	1361	838	1324	1104	688	1050
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.18	0.02	0.33	0.02	0.06	0.14

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	188	72	130	435	43	58	188	29	173
v/c Ratio	0.29	0.33	0.13	0.52	0.72	0.08	0.33	0.32	0.19	0.34
Control Delay	43.5	30.1	3.7	47.5	37.8	0.3	47.6	22.5	47.0	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	30.1	3.7	47.5	37.8	0.3	47.6	22.5	47.0	24.2
Queue Length 50th (ft)	33	88	0	73	226	0	33	69	16	62
Queue Length 95th (ft)	55	122	4	107	288	0	60	106	37	100
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	537	842	752	537	836	731	537	791	537	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.22	0.10	0.24	0.52	0.06	0.11	0.24	0.05	0.25

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	309	202	691	873	734	511	585	43	1436	181
v/c Ratio	0.24	0.40	0.18	0.84	0.88	0.85	0.37	0.60	0.12	0.78	0.21
Control Delay	67.0	54.0	20.5	72.0	63.9	71.6	35.6	5.3	66.1	53.8	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	54.0	20.5	72.0	63.9	71.6	35.6	5.3	66.1	53.8	11.3
Queue Length 50th (ft)	42	144	52	248	449	263	205	0	21	397	15
Queue Length 95th (ft)	72	202	86	293	547	314	257	88	43	450	50
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	668	1056	1194	971	1046	971	1376	970	668	1912	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.17	0.71	0.83	0.76	0.37	0.60	0.06	0.75	0.20

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	943	11	1489	34	34	22	34	147
v/c Ratio	0.28	0.29	0.09	0.75	0.04	0.23	0.09	0.23	0.44
Control Delay	41.4	11.0	42.5	21.4	0.1	41.7	19.8	41.8	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	11.0	42.5	21.4	0.1	41.7	19.8	41.8	10.6
Queue Length 50th (ft)	16	26	4	185	0	12	4	12	4
Queue Length 95th (ft)	68	242	27	#879	0	56	22	56	46
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	625	3204	625	1989	906	521	574	521	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.29	0.02	0.75	0.04	0.07	0.04	0.07	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	11	841	23	68	1409	45	23	11	11
v/c Ratio	0.06	0.26	0.02	0.28	0.35	0.12	0.03	0.06	0.02
Control Delay	32.9	12.5	0.1	30.1	9.9	30.1	0.1	32.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	12.5	0.1	30.1	9.9	30.1	0.1	32.9	0.0
Queue Length 50th (ft)	2	26	0	11	0	3	0	2	0
Queue Length 95th (ft)	25	219	0	85	372	32	0	25	0
Internal Link Dist (ft)		900			226				88
Turn Bay Length (ft)	220		170	330		200	200		
Base Capacity (vph)	710	3753	1162	710	3896	1586	1093	710	1009
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.22	0.02	0.10	0.36	0.03	0.02	0.02	0.01

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	92	230	126	11	839	23	34	6	5	46	356
v/c Ratio	0.14	0.09	0.15	0.02	0.50	0.04	0.09	0.01	0.01	0.16	0.55
Control Delay	32.9	13.9	5.3	35.9	21.1	0.1	37.7	0.0	0.0	33.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	13.9	5.3	35.9	21.1	0.1	37.7	0.0	0.0	33.3	6.7
Queue Length 50th (ft)	12	8	0	1	72	0	5	0	0	14	3
Queue Length 95th (ft)	59	67	41	12	233	0	28	0	0	69	54
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1272	3175	1013	1272	3121	984	1272	1008	1008	660	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.07	0.12	0.01	0.27	0.02	0.03	0.01	0.00	0.07	0.42

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	64	64	277	479	596	1457	234
v/c Ratio	0.12	0.12	0.26	0.77	0.30	1.24	0.36
Control Delay	28.0	28.0	4.5	46.9	10.8	145.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	28.0	4.5	46.9	10.8	145.0	7.1
Queue Length 50th (ft)	28	28	0	140	92	~588	14
Queue Length 95th (ft)	78	78	36	227	120	#788	70
Internal Link Dist (ft)		2684			478	1322	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	518	518	1095	1054	2015	1177	649
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.12	0.25	0.45	0.30	1.24	0.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	77	122	122	500	795	1077	154
v/c Ratio	0.23	0.16	0.16	1.20	0.24	0.86	0.25
Control Delay	43.0	0.4	0.4	143.5	10.3	38.3	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	0.4	0.4	143.5	10.3	38.3	11.4
Queue Length 50th (ft)	16	0	0	~246	28	207	12
Queue Length 95th (ft)	43	0	0	#602	132	#490	58
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	971	911	911	417	3267	1251	618
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.13	0.13	1.20	0.24	0.86	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	200	59	200	565	129	518	118	82	1435	459
v/c Ratio	0.48	0.36	0.11	0.62	0.96	0.50	0.40	0.18	0.56	1.08	0.64
Control Delay	64.2	37.7	0.4	64.5	70.5	64.3	32.6	4.9	71.0	88.8	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	37.7	0.4	64.5	70.5	64.3	32.6	4.9	71.0	88.8	21.4
Queue Length 50th (ft)	50	131	0	85	458	54	170	0	68	~720	158
Queue Length 95th (ft)	76	190	0	115	#619	81	225	30	111	#848	264
Internal Link Dist (ft)		743			912		950			942	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	353	558	555	483	600	353	1296	639	208	1326	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.36	0.11	0.41	0.94	0.37	0.40	0.18	0.39	1.08	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	317	234	33	483	133	33	250	100	233	417
v/c Ratio	0.84	0.26	0.28	0.86	0.25	0.28	0.67	0.54	0.49	0.58
Control Delay	59.8	19.3	52.3	50.2	10.1	52.3	45.0	54.6	34.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	19.3	52.3	50.2	10.1	52.3	45.0	54.6	34.4	6.6
Queue Length 50th (ft)	194	89	20	283	11	20	144	61	127	0
Queue Length 95th (ft)	212	118	37	288	19	37	146	79	127	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	381	909	381	602	567	381	430	381	520	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.26	0.09	0.80	0.23	0.09	0.58	0.26	0.45	0.56

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	197	61	45	348	152	76	152	136	243
v/c Ratio	0.23	0.21	0.13	0.23	0.38	0.30	0.34	0.29	0.47	0.44
Control Delay	41.0	27.6	2.6	41.0	28.2	7.6	40.3	19.4	39.0	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	27.6	2.6	41.0	28.2	7.6	40.3	19.4	39.0	15.2
Queue Length 50th (ft)	22	46	0	22	85	0	38	43	67	51
Queue Length 95th (ft)	44	60	0	44	99	15	64	72	96	79
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	642	1898	864	642	1898	882	642	827	642	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.10	0.07	0.07	0.18	0.17	0.12	0.18	0.21	0.30

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	232	146	366	293	146	183	841	122	134	1366	195
v/c Ratio	0.21	0.40	0.17	0.75	0.39	0.21	0.53	0.64	0.25	0.64	0.99	0.37
Control Delay	58.8	33.7	5.3	62.0	27.4	4.6	60.3	44.3	8.3	67.9	65.6	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	33.7	5.3	62.0	27.4	4.6	60.3	44.3	8.3	67.9	65.6	12.2
Queue Length 50th (ft)	24	133	0	147	157	0	74	229	0	105	~450	25
Queue Length 95th (ft)	46	211	19	198	236	31	109	269	38	166	454	72
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	591	666	954	591	759	718	591	1345	496	304	1396	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.35	0.15	0.62	0.39	0.20	0.31	0.63	0.25	0.44	0.98	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	215	13	51	481	13	13	76	13	89
v/c Ratio	0.11	0.22	0.02	0.20	0.43	0.01	0.06	0.24	0.06	0.28
Control Delay	31.5	13.3	0.0	29.3	13.0	0.0	32.3	11.3	32.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	13.3	0.0	29.3	13.0	0.0	32.3	11.3	32.3	11.0
Queue Length 50th (ft)	4	33	0	9	39	0	2	2	2	2
Queue Length 95th (ft)	36	130	0	59	293	0	24	31	24	33
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	1033	1532	1249	1033	1532	1246	1033	1109	1033	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.14	0.01	0.05	0.31	0.01	0.01	0.07	0.01	0.08

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	79	105	197

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	141	99	155	226	56	1113	155	28	972	42
v/c Ratio	0.43	0.46	0.27	0.54	0.63	0.43	0.55	0.16	0.24	0.51	0.05
Control Delay	65.8	50.5	3.7	61.9	48.0	65.8	21.2	4.9	61.0	22.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	50.5	3.7	61.9	48.0	65.8	21.2	4.9	61.0	22.5	0.1
Queue Length 50th (ft)	45	108	0	63	158	45	291	5	22	247	0
Queue Length 95th (ft)	69	111	0	75	148	69	369	24	42	324	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	159	562	564	526	655	159	2027	947	159	1909	879
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.25	0.18	0.29	0.35	0.35	0.55	0.16	0.18	0.51	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	322	16	339	48	32	64	32	113
v/c Ratio	0.25	0.30	0.08	0.36	0.06	0.18	0.18	0.18	0.30
Control Delay	34.2	13.3	33.9	17.2	1.5	35.0	19.0	35.0	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	13.3	33.9	17.2	1.5	35.0	19.0	35.0	18.9
Queue Length 50th (ft)	11	30	4	58	0	7	11	7	18
Queue Length 95th (ft)	44	153	21	165	0	34	33	34	48
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	432	1543	987	1686	1410	308	1282	308	1266
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.21	0.02	0.20	0.03	0.10	0.05	0.10	0.09

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	62	231	338	15	15	46
v/c Ratio	0.24	0.17	0.30	0.02	0.05	0.06
Control Delay	24.6	5.8	13.2	0.0	16.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	5.8	13.2	0.0	16.6	0.1
Queue Length 50th (ft)	13	19	60	0	3	0
Queue Length 95th (ft)	45	66	140	0	12	0
Internal Link Dist (ft)		175	1067			1603
Turn Bay Length (ft)	200			180	40	
Base Capacity (vph)	886	1455	1400	1172	730	1119
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.16	0.24	0.01	0.02	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	242	45	91	258	30	45	136	15	60
v/c Ratio	0.16	0.29	0.06	0.30	0.30	0.04	0.18	0.28	0.07	0.15
Control Delay	27.8	18.9	0.1	29.6	19.7	0.1	31.6	10.9	34.0	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	18.9	0.1	29.6	19.7	0.1	31.6	10.9	34.0	15.5
Queue Length 50th (ft)	10	44	0	19	44	0	10	11	3	6
Queue Length 95th (ft)	42	138	0	76	158	0	46	38	22	29
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	856	1313	1144	856	1306	1106	856	1016	856	1014
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.18	0.04	0.11	0.20	0.03	0.05	0.13	0.02	0.06

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	319	917	486	861	862	1403	1028	833	83	958	181
v/c Ratio	0.77	0.94	0.35	0.95	0.73	1.56	0.96	1.03	0.25	0.68	0.24
Control Delay	83.1	74.3	24.1	86.6	52.8	297.1	75.1	63.8	71.9	61.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	74.3	24.1	86.6	52.8	297.1	75.1	63.8	71.9	61.3	6.8
Queue Length 50th (ft)	173	502	156	325	418	~740	574	~578	42	277	0
Queue Length 95th (ft)	183	480	172	313	431	#658	487	366	61	243	10
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	620	980	1385	902	1182	902	1073	806	620	1776	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.94	0.35	0.95	0.73	1.56	0.96	1.03	0.13	0.54	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	85	1774	14	1606	28	85	28	28	56
v/c Ratio	0.44	0.53	0.11	0.83	0.03	0.44	0.11	0.20	0.24
Control Delay	45.3	14.5	45.6	28.1	0.1	45.3	20.1	45.0	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	14.5	45.6	28.1	0.1	45.3	20.1	45.0	16.6
Queue Length 50th (ft)	38	150	6	370	0	38	6	13	6
Queue Length 95th (ft)	87	389	25	#732	0	87	20	40	25
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	575	3351	575	1935	884	479	533	479	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.53	0.02	0.83	0.03	0.18	0.05	0.06	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	29	1600	57	71	1443	71	71	14	14
v/c Ratio	0.17	0.49	0.06	0.34	0.41	0.21	0.09	0.09	0.02
Control Delay	37.7	17.0	1.1	36.5	13.8	34.8	0.2	38.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	17.0	1.1	36.5	13.8	34.8	0.2	38.3	0.1
Queue Length 50th (ft)	9	122	0	22	48	11	0	4	0
Queue Length 95th (ft)	37	#350	0	69	289	36	0	23	0
Internal Link Dist (ft)		900			226				88
Turn Bay Length (ft)	220		170	330		200	200		
Base Capacity (vph)	615	3249	1018	615	3516	1373	1025	615	927
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.49	0.06	0.12	0.41	0.05	0.07	0.02	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	188	884	58	14	899	29	101	7	7	43	144
v/c Ratio	0.36	0.35	0.07	0.03	0.58	0.05	0.30	0.01	0.01	0.25	0.34
Control Delay	35.6	15.5	1.1	38.4	25.2	0.2	39.6	0.0	0.0	42.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	15.5	1.1	38.4	25.2	0.2	39.6	0.0	0.0	42.2	8.9
Queue Length 50th (ft)	36	67	0	2	109	0	20	0	0	17	5
Queue Length 95th (ft)	83	185	0	12	199	0	51	0	0	53	22
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	996	2632	857	996	2509	809	996	839	839	513	611
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.34	0.07	0.01	0.36	0.04	0.10	0.01	0.01	0.08	0.24

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	128	129	571	157	700	814	143
v/c Ratio	0.22	0.23	0.43	0.39	0.38	0.66	0.21
Control Delay	23.8	23.9	3.4	40.7	12.5	26.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	23.9	3.4	40.7	12.5	26.6	1.6
Queue Length 50th (ft)	50	51	0	41	112	195	0
Queue Length 95th (ft)	90	90	0	63	106	186	0
Internal Link Dist (ft)		2680			502	1332	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	573	573	1369	1165	2017	1303	697
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.23	0.42	0.13	0.35	0.62	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	83	134	133	300	900	500	67
v/c Ratio	0.16	0.16	0.16	0.55	0.28	0.57	0.15
Control Delay	29.5	0.4	0.4	31.2	9.9	28.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	0.4	0.4	31.2	9.9	28.9	3.2
Queue Length 50th (ft)	13	0	0	80	33	77	0
Queue Length 95th (ft)	34	0	0	#233	143	163	0
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1307	1010	1010	547	4255	1644	775
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13	0.13	0.55	0.21	0.30	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	282	197	155	127	253	70	1099	127	56	803	127
v/c Ratio	0.72	0.46	0.32	0.48	0.71	0.34	0.66	0.16	0.45	0.47	0.16
Control Delay	61.8	41.9	6.9	58.7	52.6	57.9	29.6	5.1	64.1	24.4	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	41.9	6.9	58.7	52.6	57.9	29.6	5.1	64.1	24.4	4.7
Queue Length 50th (ft)	109	131	0	49	174	27	348	0	42	222	0
Queue Length 95th (ft)	119	141	19	62	177	39	371	19	65	248	18
Internal Link Dist (ft)		743			912		950			967	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	439	542	563	382	495	325	1659	791	167	1694	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.36	0.28	0.33	0.51	0.22	0.66	0.16	0.34	0.47	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	334	18	228	18	18	71	35	70	158
v/c Ratio	0.37	0.39	0.10	0.38	0.03	0.10	0.19	0.17	0.18	0.34
Control Delay	30.3	16.3	33.8	22.2	0.1	33.8	19.4	32.8	21.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	16.3	33.8	22.2	0.1	33.8	19.4	32.8	21.7	6.8
Queue Length 50th (ft)	23	33	4	44	0	4	12	8	15	0
Queue Length 95th (ft)	67	141	20	112	0	20	32	31	37	2
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	732	1152	732	1157	996	732	781	732	816	782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.29	0.02	0.20	0.02	0.02	0.09	0.05	0.09	0.20

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	74	259	204	148	185	74	56	222	84	120
v/c Ratio	0.35	0.31	0.40	0.51	0.19	0.15	0.29	0.38	0.39	0.62
Control Delay	42.2	31.0	7.9	41.1	27.1	3.7	42.5	8.3	42.2	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	31.0	7.9	41.1	27.1	3.7	42.5	8.3	42.2	35.0
Queue Length 50th (ft)	36	63	0	72	42	0	27	12	43	29
Queue Length 95th (ft)	53	65	0	86	45	0	44	6	60	37
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	601	1754	865	601	1754	816	601	812	571	194
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.15	0.24	0.25	0.11	0.09	0.09	0.27	0.15	0.62

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	74	132	147	74	44	250	1309	147	59	750	103
v/c Ratio	0.28	0.21	0.21	0.35	0.20	0.12	0.54	0.68	0.22	0.27	0.46	0.18
Control Delay	42.7	32.1	6.3	42.6	31.6	0.6	43.5	27.4	6.8	45.3	26.4	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	32.1	6.3	42.6	31.6	0.6	43.5	27.4	6.8	45.3	26.4	7.0
Queue Length 50th (ft)	28	33	0	35	33	0	61	199	4	27	100	0
Queue Length 95th (ft)	62	61	7	73	60	0	111	302	22	71	177	17
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	814	706	1110	814	710	652	814	1913	663	419	1842	624
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.12	0.18	0.10	0.07	0.31	0.68	0.22	0.14	0.41	0.17

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	258	15	15	348	15	15	30	15	45
v/c Ratio	0.16	0.20	0.01	0.06	0.29	0.02	0.06	0.10	0.06	0.14
Control Delay	26.2	9.9	0.0	28.6	13.0	0.0	28.6	14.5	28.6	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	9.9	0.0	28.6	13.0	0.0	28.6	14.5	28.6	12.1
Queue Length 50th (ft)	5	18	0	2	25	0	2	2	2	2
Queue Length 95th (ft)	42	124	0	21	174	0	21	18	21	19
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	1120	1585	1289	1120	1585	1304	1120	1255	1120	1221
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.16	0.01	0.01	0.22	0.01	0.01	0.02	0.01	0.04

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	62	123	92

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	151	81	314	344	35	615	105	190	1473	163
v/c Ratio	0.71	0.35	0.19	0.93	0.86	0.31	0.44	0.15	0.83	0.84	0.20
Control Delay	77.8	43.3	6.0	94.9	68.0	68.1	33.2	4.6	85.8	37.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	43.3	6.0	94.9	68.0	68.1	33.2	4.6	85.8	37.3	8.8
Queue Length 50th (ft)	121	111	0	144	282	30	212	0	164	623	20
Queue Length 95th (ft)	179	148	27	#217	350	63	291	28	#254	#887	69
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	251	602	564	337	506	251	1406	688	251	1751	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.25	0.14	0.93	0.68	0.14	0.44	0.15	0.76	0.84	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	383	39	616	70	27	123	114	270
v/c Ratio	0.64	0.44	0.29	0.84	0.11	0.28	0.36	0.72	0.54
Control Delay	63.0	21.0	52.4	37.9	3.4	56.8	30.3	72.4	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	21.0	52.4	37.9	3.4	56.8	30.3	72.4	30.7
Queue Length 50th (ft)	57	138	21	285	0	15	51	62	119
Queue Length 95th (ft)	114	233	52	416	9	42	87	#157	177
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	223	1057	510	1335	1132	159	699	159	714
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.36	0.08	0.46	0.06	0.17	0.18	0.72	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	342	118	401	450	27	107	154	41	326
v/c Ratio	0.51	0.69	0.24	0.87	0.55	0.04	0.60	0.30	0.13	0.65
Control Delay	41.5	33.0	6.0	49.7	21.3	0.1	41.2	9.9	23.1	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.5	33.0	6.0	49.7	21.3	0.1	41.2	9.9	23.1	28.1
Queue Length 50th (ft)	49	140	0	175	153	0	43	15	14	114
Queue Length 95th (ft)	90	201	21	#327	248	0	83	41	34	168
Internal Link Dist (ft)		175			1066			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	482	762	702	482	824	716	192	552	344	537
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.45	0.17	0.83	0.55	0.04	0.56	0.28	0.12	0.61

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	357	91	130	757	43	96	213	29	300
v/c Ratio	0.48	0.55	0.15	0.59	1.14	0.07	0.51	0.36	0.24	0.63
Control Delay	50.5	34.5	6.5	53.6	113.1	0.2	53.6	24.3	51.2	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	34.5	6.5	53.6	113.1	0.2	53.6	24.3	51.2	33.5
Queue Length 50th (ft)	58	195	0	78	~614	0	58	87	18	134
Queue Length 95th (ft)	84	239	14	110	#679	0	88	123	38	182
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	417	663	612	417	665	602	417	678	417	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.54	0.15	0.31	1.14	0.07	0.23	0.31	0.07	0.54

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	85	309	202	722	882	734	532	611	61	1436	181
v/c Ratio	0.24	0.40	0.18	0.84	0.88	0.85	0.39	0.62	0.17	0.78	0.21
Control Delay	67.2	54.7	20.9	72.1	63.9	72.0	36.1	5.6	66.5	54.2	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	54.7	20.9	72.1	63.9	72.0	36.1	5.6	66.5	54.2	11.3
Queue Length 50th (ft)	42	145	52	259	456	263	215	2	30	397	15
Queue Length 95th (ft)	72	202	86	308	#559	314	269	94	56	450	50
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	664	1050	1182	966	1039	966	1371	983	664	1902	905
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.17	0.75	0.85	0.76	0.39	0.62	0.09	0.75	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	63	972	11	1513	34	34	22	34	167
v/c Ratio	0.35	0.30	0.08	0.77	0.04	0.22	0.09	0.22	0.47
Control Delay	41.7	11.0	43.2	22.5	0.1	42.3	20.2	42.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	11.0	43.2	22.5	0.1	42.3	20.2	42.3	10.7
Queue Length 50th (ft)	22	27	4	198	0	12	4	12	4
Queue Length 95th (ft)	88	250	27	#918	0	57	23	57	49
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	628	3205	628	1965	897	523	575	523	634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.30	0.02	0.77	0.04	0.07	0.04	0.07	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	11	870	23	176	1433	45	23
v/c Ratio	0.06	0.40	0.03	0.51	0.38	0.12	0.03
Control Delay	36.2	17.1	0.1	31.1	9.8	33.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	17.1	0.1	31.1	9.8	33.2	0.1
Queue Length 50th (ft)	3	62	0	43	46	6	0
Queue Length 95th (ft)	26	247	0	186	372	34	0
Internal Link Dist (ft)		900			226		
Turn Bay Length (ft)	220		170	330		200	200
Base Capacity (vph)	699	2992	947	699	3687	1561	1112
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	0.02	0.25	0.39	0.03	0.02

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	124	307	126	11	1030	28	34	6	5	48	421
v/c Ratio	0.21	0.12	0.15	0.02	0.55	0.04	0.10	0.01	0.01	0.16	0.61
Control Delay	34.4	13.5	5.2	37.8	21.8	0.1	39.5	0.0	0.0	33.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	13.5	5.2	37.8	21.8	0.1	39.5	0.0	0.0	33.8	7.3
Queue Length 50th (ft)	19	11	0	1	93	0	5	0	0	15	3
Queue Length 95th (ft)	75	87	40	13	300	0	29	0	0	73	57
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	1164	3113	995	1164	2933	931	1164	948	948	613	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.10	0.13	0.01	0.35	0.03	0.03	0.01	0.01	0.08	0.49

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	97	98	283	512	610	1464	382
v/c Ratio	0.19	0.19	0.27	0.78	0.30	1.26	0.59
Control Delay	29.0	29.0	4.5	47.2	10.7	153.5	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	29.0	4.5	47.2	10.7	153.5	17.0
Queue Length 50th (ft)	44	44	0	152	94	~604	89
Queue Length 95th (ft)	112	113	36	243	122	#810	200
Internal Link Dist (ft)		2684			478	1322	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	512	512	1091	1043	2031	1164	644
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.19	0.26	0.49	0.30	1.26	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	77	122	122	500	850	1188	154
v/c Ratio	0.23	0.16	0.16	1.20	0.26	0.95	0.25
Control Delay	43.0	0.4	0.4	143.5	10.4	47.2	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	0.4	0.4	143.5	10.4	47.2	11.4
Queue Length 50th (ft)	16	0	0	~246	31	240	12
Queue Length 95th (ft)	43	0	0	#602	142	#568	58
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	971	910	910	417	3267	1251	618
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.13	0.13	1.20	0.26	0.95	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	200	59	200	590	129	594	118	134	1588	459
v/c Ratio	0.48	0.35	0.11	0.62	0.99	0.50	0.49	0.20	0.74	1.21	0.66
Control Delay	64.2	37.4	0.4	64.5	76.5	64.3	36.1	5.0	80.0	140.0	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	37.4	0.4	64.5	76.5	64.3	36.1	5.0	80.0	140.0	23.8
Queue Length 50th (ft)	50	131	0	85	488	54	210	0	110	~860	176
Queue Length 95th (ft)	76	190	0	115	#664	81	260	30	169	#981	285
Internal Link Dist (ft)		743			912		950			1011	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	353	566	561	483	598	353	1209	605	208	1308	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.35	0.11	0.41	0.99	0.37	0.49	0.20	0.64	1.21	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	317	307	33	483	133	70	250	100	233	417
v/c Ratio	0.84	0.35	0.28	0.86	0.25	0.45	0.67	0.54	0.58	0.62
Control Delay	59.8	19.6	52.3	50.2	10.1	54.3	45.0	54.6	40.1	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	19.6	52.3	50.2	10.1	54.3	45.0	54.6	40.1	7.8
Queue Length 50th (ft)	194	117	20	283	11	43	144	61	131	0
Queue Length 95th (ft)	212	145	37	288	19	61	146	79	134	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	381	880	381	602	567	381	430	381	455	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.35	0.09	0.80	0.23	0.18	0.58	0.26	0.51	0.60

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	197	61	45	348	152	76	249	136	441
v/c Ratio	0.28	0.26	0.15	0.28	0.45	0.34	0.40	0.36	0.54	0.62
Control Delay	42.5	28.8	2.8	42.5	30.4	8.0	42.7	21.4	42.5	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	28.8	2.8	42.5	30.4	8.0	42.7	21.4	42.5	24.0
Queue Length 50th (ft)	22	46	0	22	85	0	38	86	67	166
Queue Length 95th (ft)	44	60	0	44	99	15	64	127	96	213
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	514	1543	721	514	1543	745	514	701	514	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.13	0.08	0.09	0.23	0.20	0.15	0.36	0.26	0.62

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	163	263	154	409	356	146	199	898	143	134	1493	387
v/c Ratio	0.50	0.45	0.18	0.81	0.52	0.22	0.57	0.69	0.28	0.65	1.09	0.63
Control Delay	61.0	35.5	5.3	64.9	32.6	5.2	61.3	45.8	8.0	68.9	96.3	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	35.5	5.3	64.9	32.6	5.2	61.3	45.8	8.0	68.9	96.3	17.1
Queue Length 50th (ft)	68	161	0	170	204	0	82	254	0	108	~545	73
Queue Length 95th (ft)	100	241	20	223	311	34	117	289	40	167	#552	145
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	582	656	947	582	739	704	582	1329	508	300	1376	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40	0.16	0.70	0.48	0.21	0.34	0.68	0.28	0.45	1.09	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	419	46	73	575	13	29	95	13	89
v/c Ratio	0.15	0.38	0.05	0.34	0.48	0.01	0.17	0.30	0.09	0.34
Control Delay	37.4	15.6	1.3	35.5	14.4	0.0	37.1	11.1	37.9	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	15.6	1.3	35.5	14.4	0.0	37.1	11.1	37.9	13.9
Queue Length 50th (ft)	7	78	0	19	50	0	8	4	4	4
Queue Length 95th (ft)	36	270	2	77	368	0	41	34	24	34
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	711	1356	1115	711	1361	1116	711	788	711	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.31	0.04	0.10	0.42	0.01	0.04	0.12	0.02	0.12

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	88	125	209

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	141	99	155	328	56	1128	163	76	979	42
v/c Ratio	0.43	0.39	0.24	0.54	0.77	0.43	0.62	0.19	0.55	0.54	0.05
Control Delay	65.8	45.2	3.3	61.9	49.3	65.8	27.1	5.6	70.7	25.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	45.2	3.3	61.9	49.3	65.8	27.1	5.6	70.7	25.3	0.1
Queue Length 50th (ft)	45	102	0	63	215	45	348	7	61	281	0
Queue Length 95th (ft)	69	111	0	75	199	69	385	26	88	327	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	159	562	564	526	653	159	1806	862	159	1804	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.25	0.18	0.29	0.50	0.35	0.62	0.19	0.48	0.54	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	387	37	456	94	32	69	53	113
v/c Ratio	0.28	0.39	0.18	0.45	0.11	0.20	0.22	0.31	0.29
Control Delay	40.8	17.6	38.2	18.0	5.4	41.5	23.8	41.6	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	17.6	38.2	18.0	5.4	41.5	23.8	41.6	22.0
Queue Length 50th (ft)	16	102	12	122	1	10	17	17	21
Queue Length 95th (ft)	48	190	40	225	12	37	39	53	55
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	373	1424	853	1607	1348	266	1157	266	1155
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.27	0.04	0.28	0.07	0.12	0.06	0.20	0.10

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	378	40	132	345	15	160	230	15	108
v/c Ratio	0.43	0.61	0.07	0.44	0.55	0.03	0.46	0.42	0.05	0.22
Control Delay	31.2	22.9	1.5	31.1	21.4	0.1	25.2	11.2	19.6	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	22.9	1.5	31.1	21.4	0.1	25.2	11.2	19.6	14.0
Queue Length 50th (ft)	38	103	0	40	91	0	44	22	4	17
Queue Length 95th (ft)	81	171	0	83	155	0	83	44	14	39
Internal Link Dist (ft)		175			1067			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	725	1106	952	725	1108	944	547	779	443	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.34	0.04	0.18	0.31	0.02	0.29	0.30	0.03	0.14

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	473	71	91	359	30	58	170	15	98
v/c Ratio	0.39	0.61	0.10	0.40	0.48	0.04	0.30	0.38	0.10	0.30
Control Delay	37.2	24.5	3.2	39.6	23.1	0.1	40.0	20.3	41.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	24.5	3.2	39.6	23.1	0.1	40.0	20.3	41.3	19.6
Queue Length 50th (ft)	39	152	0	37	108	0	23	41	6	20
Queue Length 95th (ft)	78	277	1	78	222	0	57	76	23	42
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	597	959	862	597	943	825	597	742	597	726
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.49	0.08	0.15	0.38	0.04	0.10	0.23	0.03	0.13

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	319	917	486	915	877	1403	1036	843	90	958	181
v/c Ratio	0.77	0.94	0.35	1.01	0.74	1.56	0.97	1.05	0.27	0.68	0.24
Control Delay	83.1	74.3	24.1	98.7	53.2	297.1	76.4	70.4	72.3	61.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	74.3	24.1	98.7	53.2	297.1	76.4	70.4	72.3	61.3	6.8
Queue Length 50th (ft)	173	502	156	~352	427	~740	580	~613	46	277	0
Queue Length 95th (ft)	183	480	172	335	438	#658	492	394	65	243	10
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	620	980	1385	902	1180	902	1073	800	620	1776	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.94	0.35	1.01	0.74	1.56	0.97	1.05	0.15	0.54	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	1785	14	1645	28	85	28	28	87
v/c Ratio	0.47	0.55	0.12	0.88	0.03	0.45	0.12	0.21	0.34
Control Delay	46.5	15.3	45.8	31.5	0.1	46.6	20.1	45.7	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	15.3	45.8	31.5	0.1	46.6	20.1	45.7	14.7
Queue Length 50th (ft)	40	152	6	~398	0	38	6	13	6
Queue Length 95th (ft)	91	393	25	#763	0	88	20	40	27
Internal Link Dist (ft)		923		900			508		723
Turn Bay Length (ft)	270		250		180	250		140	
Base Capacity (vph)	556	3261	556	1880	862	463	518	463	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.55	0.03	0.88	0.03	0.18	0.05	0.06	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	29	1611	57	249	1483	71	71
v/c Ratio	0.19	0.71	0.08	0.69	0.43	0.23	0.09
Control Delay	40.0	22.7	1.1	40.6	12.1	37.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	22.7	1.1	40.6	12.1	37.6	0.2
Queue Length 50th (ft)	11	169	0	87	52	13	0
Queue Length 95th (ft)	39	#416	0	200	297	38	0
Internal Link Dist (ft)		900			226		
Turn Bay Length (ft)	220		170	330		200	200
Base Capacity (vph)	541	2257	739	541	3473	1207	1011
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.71	0.08	0.46	0.43	0.06	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	241	1010	58	14	971	30	101	7	7	48	169
v/c Ratio	0.45	0.39	0.07	0.03	0.60	0.05	0.30	0.01	0.01	0.19	0.39
Control Delay	36.8	15.7	0.9	39.8	26.0	0.2	40.9	0.0	0.0	38.9	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	15.7	0.9	39.8	26.0	0.2	40.9	0.0	0.0	38.9	8.9
Queue Length 50th (ft)	49	80	0	2	120	0	21	0	0	14	5
Queue Length 95th (ft)	103	214	0	12	224	0	53	0	0	59	22
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	963	2645	861	963	2426	786	963	819	819	502	611
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.38	0.07	0.01	0.40	0.04	0.10	0.01	0.01	0.10	0.28

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	187	187	583	170	704	826	203
v/c Ratio	0.33	0.33	0.44	0.43	0.38	0.66	0.30
Control Delay	25.4	25.4	3.4	41.2	12.5	26.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	25.4	3.4	41.2	12.5	26.7	4.2
Queue Length 50th (ft)	77	77	0	45	113	198	1
Queue Length 95th (ft)	127	127	0	67	106	191	15
Internal Link Dist (ft)		2680			502	1332	
Turn Bay Length (ft)	300		300	350			190
Base Capacity (vph)	568	568	1370	1156	2005	1293	693
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.33	0.43	0.15	0.35	0.64	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	83	134	133	300	993	543	67
v/c Ratio	0.16	0.16	0.16	0.56	0.31	0.60	0.14
Control Delay	29.9	0.4	0.4	31.8	10.1	29.2	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	0.4	0.4	31.8	10.1	29.2	3.2
Queue Length 50th (ft)	13	0	0	84	38	85	0
Queue Length 95th (ft)	34	0	0	#233	159	176	0
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1287	1002	1002	539	4198	1618	765
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13	0.13	0.56	0.24	0.34	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	282	197	155	127	293	70	1217	127	75	858	127
v/c Ratio	0.72	0.43	0.31	0.48	0.76	0.34	0.77	0.17	0.55	0.52	0.16
Control Delay	61.8	39.9	6.6	58.7	53.3	57.9	34.4	6.8	67.5	26.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	39.9	6.6	58.7	53.3	57.9	34.4	6.8	67.5	26.3	5.6
Queue Length 50th (ft)	109	127	0	49	197	27	432	6	57	252	3
Queue Length 95th (ft)	119	141	19	62	200	39	422	26	83	268	22
Internal Link Dist (ft)		743			912		950			986	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	439	542	563	382	494	325	1584	754	167	1641	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.36	0.28	0.33	0.59	0.22	0.77	0.17	0.45	0.52	0.16

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	356	18	228	18	67	71	35	70	158
v/c Ratio	0.38	0.44	0.10	0.39	0.03	0.29	0.16	0.18	0.19	0.36
Control Delay	32.6	18.2	35.7	24.1	0.1	33.6	18.5	34.8	25.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	18.2	35.7	24.1	0.1	33.6	18.5	34.8	25.2	7.6
Queue Length 50th (ft)	32	71	6	65	0	21	12	11	21	0
Queue Length 95th (ft)	67	150	20	112	0	49	32	31	40	2
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	693	1079	693	1094	948	693	741	693	758	737
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.33	0.03	0.21	0.02	0.10	0.10	0.05	0.09	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	74	259	204	148	185	74	56	378	84	194
v/c Ratio	0.42	0.40	0.45	0.59	0.20	0.16	0.36	0.61	0.46	1.18
Control Delay	45.5	33.1	8.7	45.3	27.6	3.7	45.3	26.8	46.0	159.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	33.1	8.7	45.3	27.6	3.7	45.3	26.8	46.0	159.2
Queue Length 50th (ft)	36	63	0	72	42	0	27	138	43	~101
Queue Length 95th (ft)	53	65	0	86	45	0	44	148	60	105
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	456	1369	719	456	1369	659	456	621	433	164
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.19	0.28	0.32	0.14	0.11	0.12	0.61	0.19	1.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	124	144	162	97	44	256	1396	179	59	797	172
v/c Ratio	0.43	0.33	0.22	0.38	0.28	0.12	0.55	0.74	0.27	0.28	0.51	0.29
Control Delay	40.6	33.3	5.9	44.2	35.0	0.7	44.6	30.0	7.9	47.1	28.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	33.3	5.9	44.2	35.0	0.7	44.6	30.0	7.9	47.1	28.5	6.5
Queue Length 50th (ft)	70	58	0	39	45	0	64	222	9	28	111	0
Queue Length 95th (ft)	127	95	7	82	82	0	119	346	30	75	201	13
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	872	705	1115	801	691	637	801	1885	666	412	1811	658
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.18	0.13	0.20	0.14	0.07	0.32	0.74	0.27	0.14	0.44	0.26

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	330	27	32	495	15	41	60	15	45
v/c Ratio	0.21	0.26	0.03	0.16	0.42	0.02	0.20	0.16	0.08	0.17
Control Delay	36.6	13.3	0.1	37.5	17.1	0.0	37.0	11.9	38.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	13.3	0.1	37.5	17.1	0.0	37.0	11.9	38.6	17.2
Queue Length 50th (ft)	16	54	0	11	143	0	15	4	5	5
Queue Length 95th (ft)	47	165	0	37	260	0	44	21	22	22
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	862	1335	1099	862	1331	1109	862	945	862	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.25	0.02	0.04	0.37	0.01	0.05	0.06	0.02	0.05

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	77	130	112

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	256	81	314	279	35	605	93	70	1453	163
v/c Ratio	0.71	0.75	0.23	0.75	0.78	0.34	0.24	0.11	0.53	0.54	0.19
Control Delay	77.8	65.6	7.5	68.8	65.3	70.9	22.2	5.6	74.8	24.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	65.6	7.5	68.8	65.3	70.9	22.2	5.6	74.8	24.8	7.5
Queue Length 50th (ft)	121	219	0	139	234	30	111	0	61	323	17
Queue Length 95th (ft)	179	265	29	178	287	65	167	34	106	431	63
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	251	507	489	487	500	103	2521	815	161	2672	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.50	0.17	0.64	0.56	0.34	0.24	0.11	0.43	0.54	0.19

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	352	108	541	41	27	135	54	284
v/c Ratio	0.59	0.48	0.48	0.77	0.06	0.25	0.34	0.43	0.60
Control Delay	57.7	26.0	48.6	33.1	0.2	54.1	27.7	57.3	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	26.0	48.6	33.1	0.2	54.1	27.7	57.3	31.9
Queue Length 50th (ft)	54	137	53	237	0	14	49	27	120
Queue Length 95th (ft)	114	235	108	353	0	42	91	68	189
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	254	1163	581	1398	1182	181	785	181	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.30	0.19	0.39	0.03	0.15	0.17	0.30	0.35

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	68	419	500	27	41	149
v/c Ratio	0.27	0.34	0.50	0.03	0.13	0.20
Control Delay	28.2	7.5	16.6	0.1	19.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	7.5	16.6	0.1	19.5	0.6
Queue Length 50th (ft)	18	44	108	0	10	0
Queue Length 95th (ft)	58	148	265	0	29	0
Internal Link Dist (ft)		175	1066			1603
Turn Bay Length (ft)	200			180	40	
Base Capacity (vph)	794	1368	1254	1050	654	1010
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.31	0.40	0.03	0.06	0.15

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	377	72	130	507	43	58	203	29	173
v/c Ratio	0.32	0.57	0.12	0.57	0.73	0.07	0.37	0.37	0.22	0.36
Control Delay	45.6	33.7	3.6	51.2	37.3	0.2	50.5	23.4	49.1	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	33.7	3.6	51.2	37.3	0.2	50.5	23.4	49.1	25.3
Queue Length 50th (ft)	33	201	0	74	278	0	33	74	17	63
Queue Length 95th (ft)	55	240	4	107	342	0	60	112	37	100
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	445	709	648	445	721	643	445	677	445	599
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.53	0.11	0.29	0.70	0.07	0.13	0.30	0.07	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	851	298	766	1575	734	564	862	43	1436	181
v/c Ratio	0.37	0.61	0.46	0.87	1.06	0.86	0.23	0.92	0.12	0.79	0.21
Control Delay	69.5	57.9	28.5	73.8	93.5	73.5	33.4	33.0	66.3	55.2	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	57.9	28.5	73.8	93.5	73.5	33.4	33.0	66.3	55.2	11.3
Queue Length 50th (ft)	64	237	179	273	~662	263	117	419	21	397	15
Queue Length 95th (ft)	102	281	267	330	#773	315	143	#756	43	452	50
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	654	1873	681	951	1482	951	2451	936	654	1873	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.44	0.81	1.06	0.77	0.23	0.92	0.07	0.77	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	1784	45	11	2114	34	34	22	80	341
v/c Ratio	0.67	0.57	0.05	0.15	0.80	0.04	0.33	0.09	0.32	0.81
Control Delay	83.4	16.1	0.1	59.5	25.1	0.1	60.2	22.6	49.9	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.4	16.1	0.1	59.5	25.1	0.1	60.2	22.6	49.9	39.8
Queue Length 50th (ft)	45	245	0	7	417	0	22	7	39	148
Queue Length 95th (ft)	#143	498	0	29	#708	0	61	24	#159	240
Internal Link Dist (ft)		923			900			508		723
Turn Bay Length (ft)	270			250		180	250		140	
Base Capacity (vph)	101	3106	981	72	2747	873	120	721	248	730
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.57	0.05	0.15	0.77	0.04	0.28	0.03	0.32	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1739	57	159	2091	45	11	45	11	11
v/c Ratio	0.07	0.67	0.07	0.56	0.54	0.15	0.04	0.14	0.07	0.02
Control Delay	39.4	19.7	1.1	36.9	11.7	36.5	25.4	0.9	39.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	19.7	1.1	36.9	11.7	36.5	25.4	0.9	39.4	0.0
Queue Length 50th (ft)	4	157	0	52	83	7	4	0	4	0
Queue Length 95th (ft)	27	#684	5	172	#710	34	18	0	27	0
Internal Link Dist (ft)		900			226		632			88
Turn Bay Length (ft)	220		170	330		200		200		
Base Capacity (vph)	563	2598	836	563	3886	1257	760	701	563	919
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.67	0.07	0.28	0.54	0.04	0.01	0.06	0.02	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	92	632	126	11	1437	23	34	6	5	46	448
v/c Ratio	0.18	0.23	0.14	0.02	0.67	0.03	0.11	0.01	0.01	0.15	0.66
Control Delay	38.8	14.0	5.1	40.6	23.9	0.1	42.9	0.0	0.0	35.3	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	14.0	5.1	40.6	23.9	0.1	42.9	0.0	0.0	35.3	8.2
Queue Length 50th (ft)	21	44	0	2	198	0	8	0	0	17	5
Queue Length 95th (ft)	59	173	41	13	#474	0	29	0	0	70	58
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	997	3012	967	997	2511	812	997	845	845	529	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.21	0.13	0.01	0.57	0.03	0.03	0.01	0.01	0.09	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	1149	362	309	745	660	479	596	426	564	1457	234
v/c Ratio	0.44	0.82	0.35	0.74	0.57	1.01	0.94	0.37	0.38	0.78	0.80	0.34
Control Delay	57.1	46.2	4.4	64.4	40.0	59.9	81.2	32.1	7.1	56.5	37.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	46.2	4.4	64.4	40.0	59.9	81.2	32.1	7.1	56.5	37.5	5.5
Queue Length 50th (ft)	49	308	0	84	184	~321	132	128	21	150	360	7
Queue Length 95th (ft)	81	366	39	#122	229	#569	#204	167	64	189	420	60
Internal Link Dist (ft)		2684			707			569			1322	
Turn Bay Length (ft)	300		300	450		450	350		300	450		450
Base Capacity (vph)	288	1394	1026	419	1317	654	508	1624	1119	831	1925	724
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.82	0.35	0.74	0.57	1.01	0.94	0.37	0.38	0.68	0.76	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	77	173	173	500	1013	1487	179
v/c Ratio	0.25	0.26	0.26	1.34	0.29	0.97	0.25
Control Delay	50.3	0.9	0.9	204.0	9.7	48.9	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	0.9	0.9	204.0	9.7	48.9	13.7
Queue Length 50th (ft)	21	0	0	~342	42	370	25
Queue Length 95th (ft)	48	0	0	#696	173	#764	87
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1112	880	880	373	3495	1528	720
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.20	0.20	1.34	0.29	0.97	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	235	59	200	576	129	529	118	129	1494	459
v/c Ratio	0.64	0.40	0.10	0.65	0.90	0.67	0.31	0.19	0.69	0.76	0.61
Control Delay	76.7	36.8	0.3	67.5	58.0	77.1	33.8	2.0	74.0	38.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	36.8	0.3	67.5	58.0	77.1	33.8	2.0	74.0	38.4	16.9
Queue Length 50th (ft)	51	151	0	85	438	56	125	0	106	413	128
Queue Length 95th (ft)	79	212	0	118	545	85	156	7	160	439	214
Internal Link Dist (ft)		743			912		950			942	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	185	611	618	342	682	196	1702	621	241	1956	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.38	0.10	0.58	0.84	0.66	0.31	0.19	0.54	0.76	0.61

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	317	317	33	483	133	33	266	100	233	417
v/c Ratio	0.85	0.35	0.28	0.87	0.25	0.28	0.70	0.55	0.48	0.58
Control Delay	60.6	20.6	52.5	50.8	10.0	52.5	46.1	54.9	34.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	20.6	52.5	50.8	10.0	52.5	46.1	54.9	34.1	6.5
Queue Length 50th (ft)	195	129	20	284	11	20	154	61	127	0
Queue Length 95th (ft)	212	159	37	288	19	37	153	79	127	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	378	907	378	598	564	378	425	378	523	743
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.35	0.09	0.81	0.24	0.09	0.63	0.26	0.45	0.56

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	288	61	45	348	152	76	152	136	243
v/c Ratio	0.23	0.31	0.13	0.23	0.38	0.30	0.34	0.29	0.47	0.44
Control Delay	41.0	27.8	2.6	41.0	28.2	7.6	40.3	19.4	39.0	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	27.8	2.6	41.0	28.2	7.6	40.3	19.4	39.0	15.2
Queue Length 50th (ft)	22	70	0	22	85	0	38	43	67	51
Queue Length 95th (ft)	44	84	0	44	99	15	64	72	96	79
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	642	1898	864	642	1898	882	642	827	642	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.15	0.07	0.07	0.18	0.17	0.12	0.18	0.21	0.30

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	73	256	305	366	293	146	317	1061	122	146	1939	232
v/c Ratio	0.31	0.44	0.30	1.04	0.43	0.22	1.02	0.62	0.20	0.75	1.08	0.37
Control Delay	67.9	42.0	4.4	120.1	37.4	5.5	120.2	42.3	4.6	85.1	89.5	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.9	42.0	4.4	120.1	37.4	5.5	120.2	42.3	4.6	85.1	89.5	17.3
Queue Length 50th (ft)	34	191	0	~191	212	0	~163	306	0	135	~744	71
Queue Length 95th (ft)	55	246	23	#254	268	35	#226	332	24	186	#706	120
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	246	590	1005	352	686	662	310	1717	610	253	1799	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.43	0.30	1.04	0.43	0.22	1.02	0.62	0.20	0.58	1.08	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	380	13	51	544	13	13	76	13	89
v/c Ratio	0.13	0.31	0.01	0.24	0.42	0.01	0.07	0.22	0.07	0.25
Control Delay	27.3	12.0	0.0	27.8	12.5	0.0	26.8	8.4	26.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	12.0	0.0	27.8	12.5	0.0	26.8	8.4	26.8	8.2
Queue Length 50th (ft)	4	28	0	8	45	0	2	2	2	2
Queue Length 95th (ft)	32	211	0	#53	#351	0	21	25	21	26
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	187	1311	1111	215	1334	1127	187	1200	187	1184
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.29	0.01	0.24	0.41	0.01	0.07	0.06	0.07	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	342	132	210

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	141	113	155	338	56	1113	155	56	972	42
v/c Ratio	0.60	0.32	0.25	0.57	0.83	0.44	0.46	0.19	0.44	0.40	0.05
Control Delay	69.5	39.8	7.0	63.8	61.5	66.8	24.7	4.6	66.8	24.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	39.8	7.0	63.8	61.5	66.8	24.7	4.6	66.8	24.3	0.1
Queue Length 50th (ft)	79	96	0	63	252	45	222	0	45	190	0
Queue Length 95th (ft)	104	106	19	76	244	70	237	17	70	206	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	215	620	593	310	547	146	2442	824	146	2414	769
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.23	0.19	0.50	0.62	0.38	0.46	0.19	0.38	0.40	0.05

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	322	129	452	48	32	258	32	113
v/c Ratio	0.29	0.52	0.41	0.55	0.07	0.21	0.58	0.21	0.27
Control Delay	42.1	25.2	35.5	20.2	1.2	42.6	23.6	42.6	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	25.2	35.5	20.2	1.2	42.6	23.6	42.6	21.4
Queue Length 50th (ft)	15	84	38	108	0	10	51	10	23
Queue Length 95th (ft)	48	177	95	221	0	37	97	37	55
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	359	1407	821	1585	1331	256	1006	256	1060
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.23	0.16	0.29	0.04	0.13	0.26	0.13	0.11

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBT
Lane Group Flow (vph)	62	369	523	15	15	46
v/c Ratio	0.25	0.26	0.44	0.01	0.05	0.06
Control Delay	27.4	5.7	14.4	0.0	19.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	5.7	14.4	0.0	19.2	0.2
Queue Length 50th (ft)	16	34	108	0	4	0
Queue Length 95th (ft)	47	103	222	0	13	0
Internal Link Dist (ft)		175	1067			1603
Turn Bay Length (ft)	200			180	40	
Base Capacity (vph)	823	1419	1300	1094	679	1036
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.26	0.40	0.01	0.02	0.04

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	364	45	91	500	30	45	136	15	60
v/c Ratio	0.22	0.46	0.06	0.41	0.55	0.04	0.26	0.31	0.10	0.21
Control Delay	34.7	20.6	0.2	38.6	22.5	0.1	39.3	12.7	40.2	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	20.6	0.2	38.6	22.5	0.1	39.3	12.7	40.2	19.3
Queue Length 50th (ft)	18	104	0	36	150	0	18	17	6	12
Queue Length 95th (ft)	43	205	0	78	313	0	47	40	23	30
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	569	980	878	569	962	840	569	712	569	690
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.37	0.05	0.16	0.52	0.04	0.08	0.19	0.03	0.09

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	1958	681	1042	1764	1458	1028	1361	83	1125	319
v/c Ratio	0.80	1.14	0.88	1.19	1.10	1.67	0.49	1.65	0.26	0.72	0.35
Control Delay	86.1	123.6	51.5	154.9	106.4	345.4	46.5	319.8	74.7	61.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	123.6	51.5	154.9	106.4	345.4	46.5	319.8	74.7	61.6	5.6
Queue Length 50th (ft)	198	~749	652	~503	~830	~847	267	~1835	45	336	0
Queue Length 95th (ft)	196	548	584	#417	#690	#695	232	#1420	61	289	3
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	601	1721	774	874	1605	874	2080	826	601	1721	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	1.14	0.88	1.19	1.10	1.67	0.49	1.65	0.14	0.65	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	183	3183	70	14	2662	56	85	28	85	113
v/c Ratio	0.98	0.93	0.06	0.24	0.94	0.06	0.59	0.14	0.53	0.50
Control Delay	115.2	24.6	0.6	70.8	32.8	0.1	71.6	28.2	67.9	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.2	24.6	0.6	70.8	32.8	0.1	71.6	28.2	67.9	19.8
Queue Length 50th (ft)	134	522	0	10	584	0	60	10	62	10
Queue Length 95th (ft)	#262	872	0	31	719	0	106	25	#146	32
Internal Link Dist (ft)		923			900			508		723
Turn Bay Length (ft)	270			250		180	250		140	
Base Capacity (vph)	186	3437	1106	59	2839	921	204	601	159	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.93	0.06	0.24	0.94	0.06	0.42	0.05	0.53	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	29	3271	86	214	2614	71	43	314	14	14
v/c Ratio	0.41	1.10	0.09	1.13	0.75	0.25	0.15	0.85	0.20	0.05
Control Delay	82.0	77.9	1.9	155.5	18.4	61.1	45.6	47.4	72.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	77.9	1.9	155.5	18.4	61.1	45.6	47.4	72.0	0.3
Queue Length 50th (ft)	22	~1019	0	~186	441	24	29	131	11	0
Queue Length 95th (ft)	50	#1022	2	#311	575	48	51	151	31	0
Internal Link Dist (ft)		900			226		632			88
Turn Bay Length (ft)	220		170	330		200		200		
Base Capacity (vph)	70	2970	939	189	3483	299	576	582	70	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	1.10	0.09	1.13	0.75	0.24	0.07	0.54	0.20	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	493	2754	58	14	2449	29	101	7	7	43	159
v/c Ratio	0.95	0.83	0.06	0.05	0.94	0.03	0.60	0.02	0.02	0.25	0.49
Control Delay	81.3	21.4	2.5	57.2	37.3	0.1	74.2	0.2	0.2	59.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	21.4	2.5	57.2	37.3	0.1	74.2	0.2	0.2	59.3	14.0
Queue Length 50th (ft)	189	376	0	5	573	0	38	0	0	27	10
Queue Length 95th (ft)	#265	719	3	14	666	0	64	0	0	66	25
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	517	3328	1048	279	2598	835	167	627	627	174	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.83	0.06	0.05	0.94	0.03	0.60	0.01	0.01	0.25	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	257	2300	571	1157	1471	843	157	700	514	814	814	143
v/c Ratio	0.93	1.36	0.51	1.38	0.71	0.95	0.47	0.79	0.62	0.91	0.56	0.26
Control Delay	106.0	203.3	19.4	224.5	38.7	42.0	71.8	66.1	15.2	73.7	46.1	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.0	203.3	19.4	224.5	38.7	42.0	71.8	66.1	15.2	73.7	46.1	6.9
Queue Length 50th (ft)	131	~1089	117	~536	439	502	53	242	48	277	244	0
Queue Length 95th (ft)	138	#776	98	#424	350	349	62	218	35	244	215	17
Internal Link Dist (ft)		2680			592			550			1332	
Turn Bay Length (ft)	300		300	450		450	350		300	450		450
Base Capacity (vph)	276	1694	1129	836	2075	887	334	910	836	946	1533	567
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.36	0.51	1.38	0.71	0.95	0.47	0.77	0.61	0.86	0.53	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	167	142	141	450	1417	833	67
v/c Ratio	0.36	0.17	0.17	0.74	0.40	0.76	0.12
Control Delay	41.9	0.4	0.4	39.6	10.0	38.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	0.4	0.4	39.6	10.0	38.3	5.5
Queue Length 50th (ft)	45	0	0	211	78	214	0
Queue Length 95th (ft)	66	0	0	345	232	310	0
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1098	986	986	611	3569	1095	541
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.14	0.14	0.74	0.40	0.76	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	282	197	155	127	395	70	1169	127	56	803	183
v/c Ratio	0.71	0.34	0.26	0.54	0.83	0.43	0.57	0.18	0.48	0.37	0.24
Control Delay	60.9	32.2	5.1	62.7	54.4	64.2	31.1	4.4	67.2	26.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	32.2	5.1	62.7	54.4	64.2	31.1	4.4	67.2	26.0	4.7
Queue Length 50th (ft)	109	116	0	49	275	27	267	0	42	160	0
Queue Length 95th (ft)	118	125	17	64	267	41	258	12	66	164	18
Internal Link Dist (ft)		743			912		950			967	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	453	693	677	252	569	164	2052	707	138	2150	762
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.28	0.23	0.50	0.69	0.43	0.57	0.18	0.41	0.37	0.24

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	334	18	333	18	18	88	35	70	158
v/c Ratio	0.38	0.37	0.10	0.50	0.03	0.10	0.24	0.18	0.18	0.35
Control Delay	33.3	15.2	37.2	22.9	0.1	37.2	20.0	36.0	24.5	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	15.2	37.2	22.9	0.1	37.2	20.0	36.0	24.5	7.3
Queue Length 50th (ft)	26	35	5	71	0	5	15	9	17	0
Queue Length 95th (ft)	71	140	21	159	0	21	37	33	41	1
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	701	1128	701	1107	957	701	735	701	780	754
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	0.03	0.30	0.02	0.03	0.12	0.05	0.09	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	74	259	204	148	296	74	56	222	84	120
v/c Ratio	0.35	0.31	0.40	0.51	0.31	0.15	0.29	0.38	0.39	0.62
Control Delay	42.2	31.0	7.9	41.1	27.3	3.7	42.5	8.3	42.2	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	31.0	7.9	41.1	27.3	3.7	42.5	8.3	42.2	35.0
Queue Length 50th (ft)	36	63	0	72	69	0	27	12	43	29
Queue Length 95th (ft)	53	65	0	86	68	0	44	6	60	37
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	601	1754	865	601	1754	816	601	812	571	194
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.15	0.24	0.25	0.17	0.09	0.09	0.27	0.15	0.62

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	162	74	368	147	88	59	412	1956	147	59	1029	147
v/c Ratio	0.48	0.24	0.48	0.45	0.29	0.17	0.78	0.79	0.18	0.35	0.51	0.21
Control Delay	53.1	39.2	5.7	52.9	40.3	1.0	55.3	27.4	9.0	55.6	27.1	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	39.2	5.7	52.9	40.3	1.0	55.3	27.4	9.0	55.6	27.1	5.8
Queue Length 50th (ft)	51	45	0	46	53	0	131	360	17	36	169	1
Queue Length 95th (ft)	81	61	0	76	71	0	175	461	44	73	241	16
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	363	823	1415	329	806	740	653	2478	798	170	2067	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.09	0.26	0.45	0.11	0.08	0.63	0.79	0.18	0.35	0.50	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	409	15	15	530	15	15	30	15	45
v/c Ratio	0.25	0.28	0.01	0.08	0.38	0.01	0.08	0.09	0.08	0.14
Control Delay	30.6	9.4	0.0	28.0	12.6	0.0	28.0	12.6	28.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	9.4	0.0	28.0	12.6	0.0	28.0	12.6	28.0	10.6
Queue Length 50th (ft)	6	0	0	2	0	0	2	2	2	2
Queue Length 95th (ft)	40	182	0	19	242	0	19	14	19	16
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	182	1423	1194	182	1378	1169	182	1230	182	1197
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.29	0.01	0.08	0.38	0.01	0.08	0.02	0.08	0.04

Intersection Summary

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	154	169	92

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	256	81	314	344	35	615	116	201	1473	163
v/c Ratio	0.71	0.66	0.21	0.75	0.86	0.34	0.28	0.16	1.25	0.58	0.20
Control Delay	77.8	57.0	7.0	68.8	69.1	70.9	26.1	5.4	201.8	27.3	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.8	57.0	7.0	68.8	69.1	70.9	26.1	5.4	201.8	27.3	8.3
Queue Length 50th (ft)	121	209	0	139	282	30	126	0	~221	355	20
Queue Length 95th (ft)	179	264	29	178	354	65	171	37	#359	441	65
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		245		295	270		210
Base Capacity (vph)	251	507	489	487	493	103	2223	742	161	2549	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.50	0.17	0.64	0.70	0.34	0.28	0.16	1.25	0.58	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	532	120	616	70	27	150	114	284
v/c Ratio	0.65	0.78	0.54	0.82	0.10	0.28	0.44	0.73	0.57
Control Delay	65.5	36.1	52.9	36.1	3.1	59.2	30.8	75.4	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.5	36.1	52.9	36.1	3.1	59.2	30.8	75.4	33.4
Queue Length 50th (ft)	58	245	64	292	0	15	59	64	131
Queue Length 95th (ft)	121	382	123	411	9	43	105	#170	205
Internal Link Dist (ft)		923		634			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	218	1026	500	1309	1113	156	675	156	700
Starvation Cap Reductn	0	0	0	16	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.52	0.24	0.48	0.06	0.17	0.22	0.73	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	518	118	388	518	27	107	154	41	326
v/c Ratio	0.53	0.85	0.20	0.93	0.58	0.04	0.73	0.32	0.14	0.70
Control Delay	44.8	41.3	5.4	62.6	21.6	0.1	57.7	10.7	25.6	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.8	41.3	5.4	62.6	21.6	0.1	57.7	10.7	25.6	32.6
Queue Length 50th (ft)	56	240	0	201	189	0	53	18	17	137
Queue Length 95th (ft)	90	320	21	#312	293	0	87	41	34	168
Internal Link Dist (ft)		175			1066			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	443	700	655	443	888	766	159	519	309	500
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.74	0.18	0.88	0.58	0.04	0.67	0.30	0.13	0.65

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	545	91	130	829	43	96	228	29	300
v/c Ratio	0.50	0.88	0.16	0.61	1.19	0.07	0.53	0.40	0.25	0.65
Control Delay	51.8	52.1	6.5	54.8	132.0	0.2	55.1	25.1	52.1	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	52.1	6.5	54.8	132.0	0.2	55.1	25.1	52.1	34.6
Queue Length 50th (ft)	59	341	0	80	~708	0	59	96	18	139
Queue Length 95th (ft)	84	#403	14	110	#766	0	88	130	38	182
Internal Link Dist (ft)		1066			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	387	616	576	387	697	625	387	639	387	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.88	0.16	0.34	1.19	0.07	0.25	0.36	0.07	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	851	298	797	1584	734	585	887	61	1436	181
v/c Ratio	0.37	0.62	0.46	0.88	1.07	0.86	0.24	0.97	0.17	0.79	0.21
Control Delay	69.5	58.7	28.9	73.9	95.7	73.5	33.5	42.6	66.7	55.2	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	58.7	28.9	73.9	95.7	73.5	33.5	42.6	66.7	55.2	11.3
Queue Length 50th (ft)	64	238	180	285	~670	263	122	517	30	397	15
Queue Length 95th (ft)	102	281	267	344	#781	315	149	#851	56	452	50
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	654	1873	673	951	1481	951	2451	919	654	1873	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.44	0.84	1.07	0.77	0.24	0.97	0.09	0.77	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	85	1814	45	11	2138	34	34	22	80	360
v/c Ratio	0.88	0.59	0.05	0.16	0.81	0.04	0.34	0.09	0.31	0.83
Control Delay	114.4	16.7	0.1	60.2	26.0	0.1	61.0	22.6	49.7	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.4	16.7	0.1	60.2	26.0	0.1	61.0	22.6	49.7	42.4
Queue Length 50th (ft)	58	264	0	7	441	0	22	7	39	164
Queue Length 95th (ft)	#180	511	0	29	#721	0	61	24	#159	259
Internal Link Dist (ft)		923			900			508		723
Turn Bay Length (ft)	270			250		180	250		140	
Base Capacity (vph)	97	3087	976	70	2665	849	117	700	255	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.59	0.05	0.16	0.80	0.04	0.29	0.03	0.31	0.51

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	11	1768	57	267	2115	45	11	45
v/c Ratio	0.08	0.76	0.07	0.68	0.54	0.15	0.04	0.13
Control Delay	40.4	22.8	1.2	38.2	11.5	37.9	23.3	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	22.8	1.2	38.2	11.5	37.9	23.3	0.8
Queue Length 50th (ft)	4	202	0	93	84	8	4	0
Queue Length 95th (ft)	26	#689	5	#321	#712	34	15	0
Internal Link Dist (ft)		900			226		632	
Turn Bay Length (ft)	220		170	330		200		200
Base Capacity (vph)	552	2339	763	552	3935	1232	779	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.76	0.07	0.48	0.54	0.04	0.01	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	124	709	126	11	1628	28	34	6	5	48	513
v/c Ratio	0.29	0.24	0.13	0.03	0.76	0.04	0.13	0.01	0.01	0.17	0.72
Control Delay	39.6	13.8	4.9	41.3	26.5	0.1	43.9	0.0	0.0	35.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	13.8	4.9	41.3	26.5	0.1	43.9	0.0	0.0	35.9	9.3
Queue Length 50th (ft)	28	50	0	2	237	0	8	0	0	18	5
Queue Length 95th (ft)	75	195	40	13	#596	0	29	0	0	73	61
Internal Link Dist (ft)		1203			2684			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	848	2938	947	848	2136	706	848	796	796	459	813
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.13	0.01	0.76	0.04	0.04	0.01	0.01	0.10	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	195	1149	368	309	745	660	512	610	426	564	1464	382
v/c Ratio	0.68	0.83	0.36	0.74	0.57	1.03	1.01	0.38	0.38	0.78	0.79	0.54
Control Delay	65.8	46.7	4.4	64.9	40.3	68.2	96.7	32.1	7.1	56.9	37.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	46.7	4.4	64.9	40.3	68.2	96.7	32.1	7.1	56.9	37.2	15.0
Queue Length 50th (ft)	76	308	0	84	184	~360	~150	132	21	150	362	92
Queue Length 95th (ft)	#122	366	39	#122	229	#593	#225	172	64	189	422	188
Internal Link Dist (ft)		2684			707			569			1322	
Turn Bay Length (ft)	300		300	450		450	350		300	450		450
Base Capacity (vph)	287	1386	1026	417	1309	638	505	1631	1122	826	1913	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.83	0.36	0.74	0.57	1.03	1.01	0.37	0.38	0.68	0.77	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	77	173	173	500	1068	1599	179
v/c Ratio	0.25	0.26	0.26	1.34	0.31	1.05	0.25
Control Delay	50.3	0.9	0.9	204.0	9.8	67.0	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	0.9	0.9	204.0	9.8	67.0	13.7
Queue Length 50th (ft)	21	0	0	~342	45	421	25
Queue Length 95th (ft)	48	0	0	#696	184	#854	87
Internal Link Dist (ft)		2356			2828	1049	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1112	880	880	373	3495	1528	720
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.20	0.20	1.34	0.31	1.05	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	235	59	200	602	129	606	118	181	1647	459
v/c Ratio	0.64	0.39	0.10	0.65	0.93	0.67	0.39	0.20	0.82	0.86	0.62
Control Delay	76.7	36.1	0.3	67.5	60.7	77.1	36.8	2.1	83.3	43.2	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	36.1	0.3	67.5	60.7	77.1	36.8	2.1	83.3	43.2	17.2
Queue Length 50th (ft)	51	150	0	85	465	56	153	0	149	478	128
Queue Length 95th (ft)	79	212	0	118	#612	85	179	7	#230	501	214
Internal Link Dist (ft)		743			912		950			942	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	185	612	620	342	679	196	1568	585	241	1916	745
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.38	0.10	0.58	0.89	0.66	0.39	0.20	0.75	0.86	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	317	390	33	483	133	70	266	100	233	417
v/c Ratio	0.85	0.44	0.28	0.87	0.25	0.46	0.70	0.55	0.57	0.62
Control Delay	60.6	21.6	52.5	50.8	10.0	54.5	46.1	54.9	39.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	21.6	52.5	50.8	10.0	54.5	46.1	54.9	39.7	7.7
Queue Length 50th (ft)	195	163	20	284	11	43	154	61	131	0
Queue Length 95th (ft)	212	190	37	288	19	61	153	79	134	0
Internal Link Dist (ft)		912		1382			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	378	883	378	598	564	378	425	378	453	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.44	0.09	0.81	0.24	0.19	0.63	0.26	0.51	0.60

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	288	61	45	348	152	76	249	136	441
v/c Ratio	0.28	0.38	0.15	0.28	0.45	0.34	0.40	0.36	0.54	0.62
Control Delay	42.5	29.6	2.8	42.5	30.4	8.0	42.7	21.4	42.5	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	29.6	2.8	42.5	30.4	8.0	42.7	21.4	42.5	24.0
Queue Length 50th (ft)	22	70	0	22	85	0	38	86	67	166
Queue Length 95th (ft)	44	84	0	44	99	15	64	127	96	213
Internal Link Dist (ft)		1382			2356			1603		503
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	514	1543	721	514	1543	745	514	701	514	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.19	0.08	0.09	0.23	0.20	0.15	0.36	0.26	0.62

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	176	288	312	409	356	146	333	1117	143	146	2066	423
v/c Ratio	0.72	0.49	0.31	1.16	0.55	0.23	1.07	0.65	0.23	0.75	1.15	0.62
Control Delay	82.8	43.4	4.4	154.6	41.9	5.7	132.3	43.1	6.9	85.1	115.8	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	43.4	4.4	154.6	41.9	5.7	132.3	43.1	6.9	85.1	115.8	22.9
Queue Length 50th (ft)	85	220	0	~234	270	0	~179	327	2	135	~835	165
Queue Length 95th (ft)	115	278	23	#297	332	35	#242	353	40	186	#787	230
Internal Link Dist (ft)		2383			532			1322			2828	
Turn Bay Length (ft)	290		230	220		250	240		240	240		220
Base Capacity (vph)	246	590	1009	352	648	633	310	1717	610	253	1799	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.49	0.31	1.16	0.55	0.23	1.07	0.65	0.23	0.58	1.15	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	584	46	73	638	13	29	95	13	89
v/c Ratio	0.19	0.57	0.05	0.49	0.52	0.01	0.22	0.27	0.10	0.30
Control Delay	33.5	18.9	0.1	42.7	14.9	0.0	34.0	8.3	32.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	18.9	0.1	42.7	14.9	0.0	34.0	8.3	32.0	10.1
Queue Length 50th (ft)	7	104	0	20	57	0	8	3	4	3
Queue Length 95th (ft)	32	#398	0	#86	#445	0	35	26	21	26
Internal Link Dist (ft)		634			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	130	1024	900	150	1224	1046	130	862	130	851
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.57	0.05	0.49	0.52	0.01	0.22	0.11	0.10	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	351	151	222

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	99	141	113	155	440	56	1128	163	104	979	42
v/c Ratio	0.60	0.27	0.22	0.57	0.91	0.44	0.54	0.22	0.75	0.45	0.06
Control Delay	69.5	35.0	6.3	63.8	63.7	66.8	30.7	5.0	87.3	28.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	35.0	6.3	63.8	63.7	66.8	30.7	5.0	87.3	28.2	0.2
Queue Length 50th (ft)	79	88	0	63	317	45	260	0	84	215	0
Queue Length 95th (ft)	104	104	18	76	310	70	246	17	114	212	0
Internal Link Dist (ft)		525			923		1442			950	
Turn Bay Length (ft)	190		190	270		250		300	270		210
Base Capacity (vph)	215	620	593	310	544	146	2075	728	146	2181	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.23	0.19	0.50	0.81	0.38	0.54	0.22	0.71	0.45	0.06

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	387	150	569	94	32	263	53	113
v/c Ratio	0.36	0.67	0.54	0.66	0.12	0.27	0.62	0.40	0.25
Control Delay	54.0	33.6	46.3	26.0	5.6	53.4	28.0	55.8	23.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	33.6	46.3	26.0	5.6	53.4	28.0	55.8	23.7
Queue Length 50th (ft)	22	153	64	219	2	15	76	24	33
Queue Length 95th (ft)	52	219	115	286	11	39	109	57	61
Internal Link Dist (ft)		923		637			656		958
Turn Bay Length (ft)	270		260		180	110		100	
Base Capacity (vph)	267	1176	611	1419	1201	190	811	190	847
Starvation Cap Reductn	0	0	0	7	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.33	0.25	0.40	0.08	0.17	0.32	0.28	0.13

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	517	40	132	529	15	160	230	15	108
v/c Ratio	0.46	0.73	0.06	0.47	0.74	0.02	0.49	0.44	0.06	0.23
Control Delay	34.6	26.4	1.5	34.6	26.6	0.1	28.4	12.3	21.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.6	26.4	1.5	34.6	26.6	0.1	28.4	12.3	21.4	15.4
Queue Length 50th (ft)	47	166	0	49	170	0	55	28	5	21
Queue Length 95th (ft)	81	240	0	83	245	0	83	44	14	39
Internal Link Dist (ft)		175			1067			243		1603
Turn Bay Length (ft)	200		200	260		180			40	
Base Capacity (vph)	651	1023	886	651	1026	879	494	717	380	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.51	0.05	0.20	0.52	0.02	0.32	0.32	0.04	0.15

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	594	71	91	602	30	58	170	15	98
v/c Ratio	0.43	0.70	0.09	0.44	0.72	0.04	0.33	0.41	0.11	0.32
Control Delay	39.0	26.7	3.1	41.6	28.8	0.1	41.5	20.8	41.9	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	26.7	3.1	41.6	28.8	0.1	41.5	20.8	41.9	20.3
Queue Length 50th (ft)	40	210	0	38	216	0	24	43	6	20
Queue Length 95th (ft)	78	363	1	78	#428	0	57	76	23	42
Internal Link Dist (ft)		1067			2383			1341		257
Turn Bay Length (ft)	260		190	240		190	130		100	
Base Capacity (vph)	521	853	777	521	833	740	521	658	521	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.70	0.09	0.17	0.72	0.04	0.11	0.26	0.03	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	347	1958	681	1096	1779	1458	1036	1371	90	1125	319
v/c Ratio	0.80	1.14	0.88	1.25	1.11	1.67	0.50	1.67	0.28	0.72	0.35
Control Delay	86.1	123.6	51.5	177.8	110.0	345.4	46.6	330.4	75.0	61.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	123.6	51.5	177.8	110.0	345.4	46.6	330.4	75.0	61.6	5.6
Queue Length 50th (ft)	198	~749	652	~548	~843	~847	269	~1871	49	336	0
Queue Length 95th (ft)	196	548	584	#453	#702	#695	234	#1452	65	289	3
Internal Link Dist (ft)		683			923		998			1442	
Turn Bay Length (ft)	220		220	350		320		310	270		270
Base Capacity (vph)	601	1721	774	874	1604	874	2080	821	601	1721	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	1.14	0.88	1.25	1.11	1.67	0.50	1.67	0.15	0.65	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	3194	70	14	2701	56	85	28	85	144
v/c Ratio	1.02	0.93	0.06	0.24	0.95	0.06	0.59	0.14	0.53	0.56
Control Delay	122.8	24.9	0.6	70.9	34.5	0.1	71.7	28.2	68.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.8	24.9	0.6	70.9	34.5	0.1	71.7	28.2	68.0	19.1
Queue Length 50th (ft)	139	527	0	10	603	0	60	10	62	10
Queue Length 95th (ft)	#271	#882	0	31	736	0	106	25	#146	32
Internal Link Dist (ft)		923			900			508		723
Turn Bay Length (ft)	270			250		180	250		140	
Base Capacity (vph)	186	3436	1106	59	2838	921	204	601	159	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.93	0.06	0.24	0.95	0.06	0.42	0.05	0.53	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	29	3283	86	391	2654	71	43	314
v/c Ratio	0.39	1.13	0.09	1.26	0.71	0.30	0.19	0.75
Control Delay	74.5	90.8	2.2	181.7	13.8	58.9	44.6	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	90.8	2.2	181.7	13.8	58.9	44.6	20.5
Queue Length 50th (ft)	20	~955	0	~338	319	24	29	36
Queue Length 95th (ft)	50	#1117	2	#538	590	48	46	40
Internal Link Dist (ft)		900			226		632	
Turn Bay Length (ft)	220		170	330		200		200
Base Capacity (vph)	75	2894	918	310	3747	254	644	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	1.13	0.09	1.26	0.71	0.28	0.07	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	545	2880	58	14	2522	30	101	7	7	48	184
v/c Ratio	1.05	0.87	0.06	0.05	0.97	0.04	0.60	0.02	0.02	0.28	0.53
Control Delay	104.2	22.8	2.5	57.2	41.5	0.1	74.3	0.2	0.2	59.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.2	22.8	2.5	57.2	41.5	0.1	74.3	0.2	0.2	59.5	13.7
Queue Length 50th (ft)	~213	416	0	5	607	0	38	0	0	31	10
Queue Length 95th (ft)	#309	775	3	14	697	0	64	0	0	#75	23
Internal Link Dist (ft)		1203			2680			486			1341
Turn Bay Length (ft)	270		200	230		190				200	
Base Capacity (vph)	517	3326	1047	279	2597	835	167	625	625	174	676
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.87	0.06	0.05	0.97	0.04	0.60	0.01	0.01	0.28	0.27

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	374	2300	583	1157	1471	843	170	704	514	814	826	203
v/c Ratio	1.36	1.36	0.52	1.38	0.71	0.95	0.51	0.80	0.62	0.91	0.57	0.36
Control Delay	230.5	203.4	20.1	224.6	38.7	42.3	72.8	66.3	15.2	73.7	46.3	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	230.5	203.4	20.1	224.6	38.7	42.3	72.8	66.3	15.2	73.7	46.3	9.8
Queue Length 50th (ft)	~248	~1089	123	~536	439	505	58	244	48	277	248	19
Queue Length 95th (ft)	#245	#776	103	#424	350	351	66	219	35	244	219	33
Internal Link Dist (ft)		2680			592			550			1332	
Turn Bay Length (ft)	300		300	450		450	350		300	450		450
Base Capacity (vph)	276	1693	1127	836	2075	886	334	909	836	946	1533	590
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.36	1.36	0.52	1.38	0.71	0.95	0.51	0.77	0.61	0.86	0.54	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	167	142	141	450	1510	877	67
v/c Ratio	0.36	0.17	0.17	0.74	0.42	0.80	0.12
Control Delay	41.9	0.4	0.4	39.6	10.2	39.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	0.4	0.4	39.6	10.2	39.8	5.5
Queue Length 50th (ft)	45	0	0	211	85	228	0
Queue Length 95th (ft)	66	0	0	345	250	328	0
Internal Link Dist (ft)		2353			2777	1021	
Turn Bay Length (ft)	200		180	160			150
Base Capacity (vph)	1098	985	985	611	3569	1095	541
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.14	0.14	0.74	0.42	0.80	0.12

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	282	197	155	127	434	70	1287	127	75	858	183
v/c Ratio	0.71	0.33	0.25	0.54	0.86	0.43	0.66	0.19	0.60	0.41	0.25
Control Delay	60.9	30.8	4.9	62.7	56.0	64.2	34.4	4.5	74.0	27.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	30.8	4.9	62.7	56.0	64.2	34.4	4.5	74.0	27.6	4.8
Queue Length 50th (ft)	109	112	0	49	298	27	319	0	57	181	0
Queue Length 95th (ft)	118	125	17	64	295	41	289	12	84	176	18
Internal Link Dist (ft)		743			912		950			967	
Turn Bay Length (ft)	260		260	270		250		290	290		210
Base Capacity (vph)	453	693	677	252	567	164	1956	681	138	2070	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.28	0.23	0.50	0.77	0.43	0.66	0.19	0.54	0.41	0.25

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	356	18	333	18	67	88	35	70	158
v/c Ratio	0.39	0.42	0.10	0.52	0.03	0.30	0.20	0.18	0.20	0.37
Control Delay	35.4	17.0	38.8	24.9	0.1	36.5	18.9	37.7	28.1	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	17.0	38.8	24.9	0.1	36.5	18.9	37.7	28.1	8.3
Queue Length 50th (ft)	36	73	6	105	0	23	15	12	23	0
Queue Length 95th (ft)	71	148	21	159	0	52	37	33	44	1
Internal Link Dist (ft)		912		1379			958		453	
Turn Bay Length (ft)	160		190		190	100		150		150
Base Capacity (vph)	668	1069	668	1055	918	668	706	668	729	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.33	0.03	0.32	0.02	0.10	0.12	0.05	0.10	0.22

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	74	259	204	148	296	74	56	378	84	194
v/c Ratio	0.42	0.40	0.45	0.59	0.32	0.16	0.36	0.61	0.46	1.18
Control Delay	45.5	33.1	8.7	45.3	28.3	3.7	45.3	26.8	46.0	159.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	33.1	8.7	45.3	28.3	3.7	45.3	26.8	46.0	159.2
Queue Length 50th (ft)	36	63	0	72	69	0	27	138	43	~101
Queue Length 95th (ft)	53	65	0	86	68	0	44	148	60	105
Internal Link Dist (ft)		1379			2353			1603		508
Turn Bay Length (ft)	200		180	150		280	60		100	
Base Capacity (vph)	456	1369	719	456	1369	659	456	621	433	164
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.19	0.28	0.32	0.22	0.11	0.12	0.61	0.19	1.18

Intersection Summary

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	324	124	379	162	112	59	418	2043	179	59	1076	216
v/c Ratio	0.91	0.37	0.47	0.50	0.35	0.16	0.79	0.84	0.23	0.35	0.55	0.30
Control Delay	78.4	41.0	5.4	54.9	41.5	0.9	56.2	29.9	9.7	56.7	28.7	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.4	41.0	5.4	54.9	41.5	0.9	56.2	29.9	9.7	56.7	28.7	6.1
Queue Length 50th (ft)	110	77	0	53	70	0	136	405	24	37	187	5
Queue Length 95th (ft)	#174	93	0	82	86	0	178	488	53	73	254	18
Internal Link Dist (ft)		2383			532			1332			2777	
Turn Bay Length (ft)	270		230	220		250	240		240	240		220
Base Capacity (vph)	357	810	1404	324	792	730	642	2437	794	167	2017	733
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.15	0.27	0.50	0.14	0.08	0.65	0.84	0.23	0.35	0.53	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	482	27	32	677	15	41	60	15	45
v/c Ratio	0.34	0.38	0.02	0.24	0.56	0.01	0.31	0.18	0.11	0.16
Control Delay	38.0	13.7	0.1	34.4	17.9	0.0	36.7	9.7	32.3	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	13.7	0.1	34.4	17.9	0.0	36.7	9.7	32.3	12.5
Queue Length 50th (ft)	12	39	0	9	127	0	11	4	4	4
Queue Length 95th (ft)	40	217	0	31	#361	0	38	17	19	16
Internal Link Dist (ft)		637			370			133		360
Turn Bay Length (ft)	200		180	210		190	100		50	
Base Capacity (vph)	134	1277	1086	134	1212	1046	134	884	134	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.38	0.02	0.24	0.56	0.01	0.31	0.07	0.11	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
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Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	169	175	112

Intersection Summary

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